40 Rack

POPULAR Computing WEEKLY

Only 50p.

14-20 August 1986

Vol 5 No 33

Atari to show new micros at PCW

Full story inside

This week's news

Confusion over Amstrad sales in US

Commodore 64c set for Manchester debut

Commodore's 64c and Geos

Part two of our special feature GeoWrite and GeoPaint – starts page 10




STAINLESS STEEL
Spectrum/Amstrad Cassette £8.95
Amstrad Disc £13.95
MIKRO-GEN
Unit 15 The Western Centre
Western Road
Bracknell
Berks.

14-20 August — Contents

◀ SOFTWARE

Commodore's 64c

GAMES ▶

◀ PROGRAMMING

REGULARS ▶

Editor Christina Erskine **News editor** John Lettice **Features editor** John Cook **Technical editor** Duncan Evans **Production editor** Michelle Beauchamp **Supplements editor** Christopher Jenkins **Supplements designer** Barbara Hajek **Advertisement and Promotions manager** Simon Langston **Assistant advertisement manager** David Osen **Advertisement executive** Jon Beales **Classified executive** Rodney Woodley **Editorial secretary** Annmarie O Dwyer **Administration** Geraldine Smyth **Managing editor** Peter Worlock **Publishing director** Jenny Ireland **Published by** Sunshine Publications Ltd 12–13 Little Newport Street, London WC2H 7PP Tel 01-437 4343 Telex 296275 **Typeset by** Magazine Typesetters 6 Parnell Court, East Portway, Andover, Hampshire **Printed by** McCorquodale Magazines, Andover, Hampshire. **Distributed by** S M Distribution London SW9 Tel 01-274 8611, Telex 261643

Popular Computing Weekly. Tel: 01-437 4343.

ABC

How to submit articles Articles which are submitted for publication should not be more than 2000 words long. The articles and any accompanying programs should be original. It is breaking the law of copyright to copy programs out of other magazines and submit them here – so please do not be tempted. We cannot guarantee to return your programs – so please do not send your only copy. **Accuracy** *Popular Computing Weekly* cannot accept any responsibility for any errors in programs we publish, although we will always try our best to make sure programs work.

Slow sales for PCW in the US

Immigration problems for the PCW?

AMSTRAD PCW sales have yet to take off in the United States, says a leading US analyst and with the market increasingly obsessed by cheap IBM PC clones it is beginning to seem doubtful that the machine will be able to repeat its European success across the Atlantic

I don t think really much has begun yet says Eric Arnum of International Resource Development 'If Amstrad is to take off here I d have to see more evidence of that Much has been made in the UK about Amstrad s deal with US retail chain Sears but big as Sears is Arnum doesn t accept that the company can generate the volume needed to turn the PCW into a major player in the US market

I doubt that CP/M has much of a future in the US – MSDOS is market dominant Arnum points out that even Atari s ST has still to prove itself and Amstrad is further hampered by the fact that British bids for stardom in the US are nowadays almost automatically associated with the spectacular failures of Sinclair, Acorn and Apricot there

Martin Alper of Mastertronic recently moved to California to head up the company s operation there and his impressions so far confirm Arnum s views 'I ve never seen it in the stores here and none of my software developers have even heard of it ' he says Mastertronic is going for the US software market in a big way but Alper sees the PC standard, the ST and the Commodore 128 (which despite its failure in the UK has a large installed base in the States) as being the up and coming machines

Amstrad itself says figures for the PCW s US sales are not available at present , but that they are positive and encouraging' The launch of the Amstrad PC in this country next month, however at an entry-level price of £344, will raise questions about the ability of the PCW and PC to sell in tandem in this country And as the US abandons itself almost completely to the IBM as a computing standard these questions will loom even larger there

Groups clubbing together

THE AMSTRAD club explosion has been taken to its logical conclusion – there s now a special club for Amstrad clubs The Amstrad Groups Federation has been formed to support Amstrad clubs and user groups operating in the UK and Europe and also administers a national discount card scheme Discounts have so far been negotiated with DK Tronics, Siren Software Design Design and Vortex with a number of others to follow

The Federation also intends to produce a monthly newsletter for distribution free of charge to member clubs

Details from Amstrad Groups Federation, 4 Sutton Road Gorton, Manchester M18 7PN

Compunet offers users free Commodore modems

COMPUNET is offering what it describes as the cheapest modem ever' to new subscribers Anyone taking out a three month subscription to the service price £15, will get a free Commodore modem for only the £3 50 cost of postage and packing while stocks last Subscribers will have to undertake to remain with the service for a full year if they want to keep it

Compunet won't specify how many modems it has, but says the number is in four figures ' Gold is the highest level of subscription offered, and includes 1,000 page days of storage in the price The service currently has over 6 000 subscribers, and is planning to move onto a new, non Commodore, machine shortly

Compunet's cost cut



Magnum force

Mikro-Gen joins the SAS



MIKRO-GEN'S new game *SAS Strike Force*, is due for a chilling preview at the *PCW* Show A genuine SAS member will be available on the Mikro Gen stand for interview while the company s 'two man SAS strike force ' has planned a number of ' fund raising activities' on behalf of the Off the Hook anti drugs appeal

SAS Strike Force has been developed in conjunction with serving members of the SAS, and should therefore be authentic

Mastertronic shoots to stardom

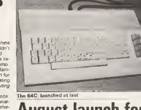
MASTERTRONIC is moving into the joystick market with the Magnum which it describes as the joystick of the future It uses a pistol grip housing a super-sensitive trigger, with the joystick itself mounted on top The joystick operates by using electronic micro-switches rather than mechanical leaf spring mechanisms, and has a full six feet of cable – handy for those really dangerous games Price isn t fixed yet but will be in the £12–£14 range

Details from Mastertronic, 8–10 Paul Street, London EC2A 4JH (01 377 6880)

More tales of Micronet ales

THE last few dates were inadvertently missed off the list of Midnight Micronetters Club venues published in News Desk, July 31 These are as follows September 4 Scarborough Inn, Leeds September 5 The Bulls Eye Basildon, September 6 *PCW* Show Bar, Olympia At the last venue indentification of organiser Simon Williams nets you a free drink

Commodore's 64 appears


The 64C launched at last

COMMODORE's 64C is to make its first official UK appearance on September 12 at the Manchester Commodore Show but it now appears that it will not be in the shops for some time after that, despite Commodore's Chris Kaday asserting that it would be on sale by the time of the *PCW* show at the beginning of September (see *Popular Computing Weekly* July 17)

In order to secure a place for the machine in the Christmas market Commodore needs to have it accepted by the major chains, but a spokeswoman for WH Smiths told *Popular Computing Weekly* that the retail chain hadn't even seen the machine yet, and therefore couldn't say if it would be stocked

Both Smiths and Boots recently dropped the Commodore 128 with Smiths blaming poor software support for the machine's disappointing sales (see *Popular Computing Weekly* August 7)

Commodore's announcement of the 64C's appearance last week made no reference to price or availability, but as the major retail chains typically will spend a month examining a product before deciding to stock it we're unlikely to see the machine in the high streets before mid October

Music link for BBC

MUSIC LINK is a control program plus a cable that allows two BBC micros to be linked in order to provide musicians with eight sound channels

The program costs £9 plus £3 50 for a connecting cable, and is designed as a utility to be used with Dinosaur's *Musicpen* music processor chip This allows one of the computers to create and edit music files for playback and costs £28 75

Details from Dinosaur Software 41 Cheney Way, Chesterton, Cambridge CB4 1UE (0223 322244)

Activision MD to set up company

ACTIVISION'S UK managing director, Hugh Rees-Parnall has resigned from the company to set up his own management consultancy The consultancy he says will specialise in the entertainment industry with particular reference to CD Rom technology

Rees Parnall headed up the UK arm of Activision until the recent appointment of Rod Cousens of Electric Dreams to the post of group managing director


Hugh Rees-Parnall

Welsh netters get cheap rate calls

MICRONET users in Wales can now access the service at local call rates after 6pm on weekdays and 1pm on Saturdays This, says Micronet, leaves only two per cent of the country unable to get local rate access and further modifications to BT exchanges should allow local rate access across the whole country in the near future

August launch for Atari's Unix ST?

ATARI is planning a major new launch for August 28 and although the company won't comment on the matter it seems likely that it will be showing a souped-up 68020 processor version of the ST The machine's operating system is thought to be Unix-related and may be being developed by UK software Metacomco, which wrote the Amiga's operating system

Metacomco won't talk about ST Unix products at the moment, but a spokesman said there would be an announcement at the time of the PCW Show The company will admit however that it has written a new Basic for the ST, and it would seem logical that this will appear on the machine

In order to utilise Unix properly a new ST would need at least 2Mb of Ram, and if Atari incorporates the blitter chip it has been working on this year Metacomco, which has written for the Amiga's version of the blitter, will be well-placed to transfer its software expertise to it

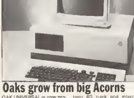
Another micro for the ST range?

Commodore 128D gets Total solution

TOTAL Office Software has launched *Total Office* for the Commodore 128D The package consists of word processor database spreadsheet graphics, integrated accounts (nominal, sales and purchase ledgers and final accounts) cash accounting and a desk diary and costs £79 95

Further details are available from Total Office Software Debden Green, Saffron Walden Essex CB11 3LX (0371 831009)

Product News



Oaks grow from big Acorns

OAK UNIVERSAL is now producing a range of personal computers based on the Acorn Master series. The Oak M series is the most basic, and is priced from £495 for a discless system to £769 for a twin 80 track drive version. The Mt range is similar, but incorporates a turbo mode and costs from £595 to £2,735 while the Communicator starts at £1 168 for twin 40 track and internal modem going up to £2 699 for twin 80 track and a 20Mb hard disc.

The other two ranges are the Scientific and the Z, the former incorporating 32016 co-processor while the latter uses a Z80B co-processor.

Details from Oak Universal, Cross Park House, Low Green Rawdon, Leeds LS19 6HA (0532 502615)

New modem for Astracom

THE ASTRACOM *1000* is an auto-dial auto answer V21/V23 modem controlled by software commands using a native and a Hayes compatible command protocol. It has an autoscan which automatically puts the modem in the mode corresponding with an incoming carrier. It also has a Centronics printer interface which can be used for serial to Centronics conversion.

Communications software is currently available for the BBC, QL, PCW and ST, with IBM and Amiga to follow. It costs £166 75 with comms software costing around £23.

Details from Astracom, 13 Beechwood Road, Uplands, Swansea SA2 0HL (0792 473697)

Public domain CP/M software

AMSTRAD Computing Newsletter a combined newsletter and user group, has instituted a public domain software library for the Amstrad computers. The software being offered so far includes assemblers, utilities and a few games, and will work on all Amstrads although the 464 will need a disc drive. Software is supplied on the customer's disc for £2, including postage and a copying fee.

Details of this and the newsletter from Chris Bryant 11 Havenview Road, Seaton, Devon EX12 2PF (0297 20456)

Utilities for Amstrad PCW

ANSIBLE Information, which has previously specialised in Apricot Software, is moving into the Amstrad market. The first two utilities to be released are *Ansible Index* and *Ansible Check*. *Index* is a text indexer which can be run against any *Locoscript* documents, even groups too large to be held on one disc. It can produce indexes of up to 1 500 entries, each capable of supporting 50 different page references and costs £49 50. *Check* is a *Locoscript* wordcount utility and costs £19 50.

Details from Ansible Information 94 London Road, Reading, Berks RG1 5AU (0672 62576)

MicroPro cuts program prices

WORDSTAR 2000 MicroPro's upgrade to *Wordstar*, and *Superscript* have been added to the company's reduced price educational list. Bona fide educational customers can purchase *Wordstar 2000* version 1 01 for £121 and version 2 0 for £172 50. *Superscript* is £19 55 for Commodore 64 and Atari 800 and £32 20 for Commodore 128 and Apple II.

Details from MicroPro International, Haygarth House 28–31 High Street London SW19 5BY (01-879 1122)

Softec upgrade for Wordwise

WORDPRO from Softec is an upgrade to *Wordwise Plus* that automates many manual operations and adds editing and continuous processing to *Wordwise*. It uses minimal disc space and operates in under 2K of Ram. At £23 Softec claims it is a highly cost effective way of upgrading.

Details from Softec, 25 Holmfield Avenue Bournemouth, Dorset BH7 6SF (0202 476415)

Diary Dates

SEPTEMBER

3–7 September
Personal Computer World Show
Olympia London
Details Software and hardware for home educational and business computer users
Price £2
Organiser Montbuild, 01-487 5831

12–14 September
9th Official Commodore Computer Show
UMIST Manchester
Details A wide range of Commodore hardware, software and peripherals
Price £3 adults £2 children £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

26–28 September
Electron and BBC Micro User Show
UMIST Manchester
Details Software hardware and peripherals for BBC machines
Price £3 adults £2 children, £1 discount for advance booking
Organiser Database Exhibitions 061 456 8835

OCTOBER

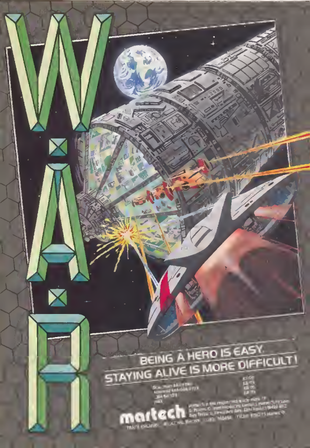
3–5 October
The Amstrad Computer Show
Novotel London
Details Home and business software and hardware for the Amstrad range
Price £3 adults £2 children £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

30–31 October
Hampshire Computer Fair
Guildhall Southampton
Details Business computers
Price Free entry by business registration
Organiser Testwood Exhibitions 0703 31557

NOVEMBER

7–9 November
Electron and BBC Micro User Show
New Horticultural Hall, Greycoat Street, London SW1
Details Hardware software and peripherals for the Electron BBC micro and Master series
Prices £3 adults £2 children £1 discount for advance booking
Organiser Database Exhibitions 061-456 8835

Prices, dates and venues of shows can vary, and you are therefore strongly advised to check with the show organiser before attending. *Popular Computing Weekly* cannot accept responsibility for any alterations to show arrangements made by the organiser.



W.A.R
BEING A HERO IS EASY.
STAYING ALIVE IS MORE DIFFICULT!
martech

Letters

Star Letter

How to get 'stoat'

With reference to the Communications article in *Popular Computing Weekly* June 19, would it be possible to supply me with the address of either Stoat or 'Tim', concerning the paragraph on Compunet music?

I do not currently own a modem, but I am a Rob Hubbard fan and enjoy listening to all his creations, especially *Rasputin* and *One Man and his Droid*

Craig Gladwell
Chatham
Kent

The best way to contact Stoat and Tim (without a modem) would be to phone Compunet's editor, Jane Firbank, on 01-965 8668 She will be able to put you in touch with them

NewBrain User Groups

I was surprised you did not publish the contact address for the two NewBrain user groups in reply to A J R Yates in *Popular* July 3 Either group can help people buying NewBrains

The groups are Open Stream – Brian Miller 1 Ranelagh Road Deal, Kent CT14 7BG Cost – £10 per annum

NewBrain User Group Gerald McMullon 36 Armitage Way Cambridge CB4 2UE Cost – £11 per annum

Both groups are excellent for software additions and helping with problems

M Ashmore
Ashton-under-Lyme
Lancs

Debuggin' debugged

It appears that there may be some confusion over the decimal loader used to load the decimal data in my program Debuggin, published in *Popular* July 3 and July 10

Some readers have made the mistake of entering a complete line of numbers before pressing *Enter*, which gives an *Overflow in 240* error

The correct way to use the loader is to enter each individual number (0-255) and press *Enter* after each one

I hope this clears up any misunderstanding

T A Bratley
Grimsby

Foreign Forum

I was interested in the letter from Mr John Carter, National Sales and Marketing Manager of the Computer Peripherals Division of Jones and Brother, in this week's *Popular Computing Weekly*, in reply to Ms Marjorie Mackintosh's query about accented letters on the Brother EP44

My method is identical to Mr Carter's except that I can get underlining by typing in *Def* against *Underline On* and *Underline Off* when modifying the printer driver

One problem I have not been able to solve is how to find the code for the Norwegian and Danish slashed 0 The QL has it in the character set and the EP44 can print it in normal mode but the manual does not mention it in the English language keyboard list or in the 8 bit list I know one can use a translate slot to print the slash, then backspace before the 'O', but this makes a mess of right justification Perhaps Mr Carter can tell us all how

Robert McAndrew
Pitlochry
Perthshire

continued on page 10 ▶

Copyright query

If a reader types in a magazine listing, is the tape or disc copy of that program copyright? Or does the magazine only hold the copyright of the printed listing as it appears in the magazine?

If the former is the case, would it hold true if you were to alter the program, ie convert it to another micro or enhance it

Even small changes to the program as listed could be made I use a Spectrum and I often see *Print (32 spaces)*, whereas I would use *Print*

Would my version differ enough that the copyright no longer existed on it? If so, could I give copies to my friends and not breach the law?

M Sleight
Doncaster

The copyright for progam listings in the magazine belongs to *Popular Computing Weekly* and continues to do so after you have typed them in

Small alterations, such as you describe, when a 'substantial' part of the program is still intact, do not change the copyright ownership Nor does conversion to another micro because it is still the same program

Technically giving copies to your friends is a breach of copyright if they haven't bought the magazine In practice, though, we really don't mind (much)

Puzzle

Puzzle No 220

Here is a card trick that you can try on a friend Have a card selected from and returned to the pack Now divide the pack between you by dealing two piles of cards face down You should deal the cards alternately in the usual way dealing the first card to your friend Ask him to examine his pile of cards for the card that he selected He will say that it isn't there so put this pile aside and pick up your pile Without turning it over deal again as before This procedure should be continued until the pack is entirely eliminated Sometimes your friend will receive an extra card in the deal but this doesn't matter

After the final deal you will have just one card remaining which proves to be the chosen card The secret is to ensure that when the chosen card is returned to the pack it ends up at the 22nd card from the top – the rest is automatic How you contrive to get it there is something which I must leave to you!

Whilst performing this trick recently I noticed to my horror that some of the cards had fallen unnoticed to the floor before I commenced the trick and I was therefore using an incomplete pack The chosen card had been returned to its correct position Fortunately the trick still worked so the trick is still possible with a pack of fewer than 52 cards Can you determine which other smaller size (or sizes) of pack will still allow the trick to work?

Solution to Puzzle 215

Clearly both A and B must be in the range 32 to 99 as they both have four digit squares as must the product of A and B In addition, corresponding digits must match to allow the values to interlock on the grid The program tests all pairs of values in the required range converting the products to string variables so that particular digits can be compared

```
 10 FOR A=32 TO 99
 20 FOR B=32 TO 99
 30 A$=STR$(A*A)
 40 B$=STR$(B*B)
 50 P$=STR$(A*B)
 60 IF VAL(MID$(A$,1,1)+MID$(B$,1,1))<>B THEN GOTO 110
 70 IF VAL(MID$(B$,4,1)+MID$(P$,4,1))<>A THEN GOTO 110
 80 PRINT;A,A$
 90 PRINT;B,B$
100 PRINT;"  ",P$
110 NEXT B
120 NEXT A
```

Winner of Puzzle No 215

The winner this week is Robert Eyre, of Birmingham, who will be receiving £10

Rules

The closing date for puzzle 220 is September 2

In your News Desk July 10 you carried an article about Oric s successor from France, naming WE Software as the UK importer

I am interested in obtaining a Telestrat, so could you let me have the company s address?

I have been a Microtan 65 owner since its inception which of course spawned the Oric 1/Atmos I also own an early Oric 1 and an Atmos complete with DOS and 3 inch discs

As I have been a 6502 programmer and an electronics engineer for the last ten years I have sorted out the hardware and soft/firmware side of the Atmos and its DOS The best improvement was to optimise the operating system/Basic and the DOS routines and I now have a very useful working tool which I use mainly with a word processing package which I wrote three years ago and patched in the DOS

C P Nowell
Sultanate of Oman

WE Software's address is Foley Bank Worcester Rd., Great Malvern, Worcs

Memotech software

As I m an avid user of the Memotech MTX512, I am glad to see that more attention has been given to it by *Popular* of late

I d like to bring to your notice that there is now a large, and good, software base for this machine

For instance *Roller Bearing* by Megastar This is an excellent game which has great multi-channel music, colourful hi-res graphics, good use of the MTX s windowing It is totally addictive and floors most of the marble games around at the moment!

Vortex Software s *Highway Encounter* has arrived thanks to Syntax Software Again this is an excellent piece of programming It's every bit as good as the Amstrad version Remember the reviews that received?

Again thanks to Syntax most of Mastertronics best software is due for release on the MTX soon Programs include *The Last V8 Soul of a Robot* and many more

Much more brilliant software is available for the MTX too including business packages A wonderful new word processor is due soon, and Sagesoft programs will be ready for MTX disc at low prices to compete with the Amstrad Microsoft s *Multiplan* is out for MTX disc now

A new disc silicon drive is to be released for the MTX in four weeks It is a 1 megabyte $3\frac{1}{2}$ inch drive, with 512k silicon disc 80 column board CP/M *NewWord* and all fits in one box on the side port of the Memotech The price? An amazing £209!

To bring *Popular's* News Desk up to date, the new company Memotech Computers Limited (MCL) has discontinued the MTX500, and has brought the price of the MTX512 down to £79 For the price of three quarters of a Spectrum you get four times the speed and power

Electro-Mech Industries Ltd is selling a true Amstrad basher for £499 95 This includes the MTX512 hi res mono monitor 1MB drives with controller, and quality Panasonic printer

For Christmas a new micro will come from MCL which will be one of the most powerful on the market and have even better graphic potential Watch out, Amstrad

To sum the letter up, the MTX has a lot of firm support and bug-free equipment which needs and deserves to be covered even more by your mag and others

Philip Arkley
Accrington

The commodity market

Whenever computer industry analysts, pundits and sundry industry figures' start nodding wisely to each other you know a trend has been spotted and the most recent outbreak of Wimbledon neck is no exception

Amstrad they say has set the business on its heels and even IBM is feeling the pinch The market, they say with satisfaction as they define the trend, is becoming increasingly commodity orientated

This has two meanings depending on your point of view If you re a big league business micro manufacturer it means those nasty box-shifters have cut pricing to the bone are importing vast quantities of machines from the Far East and are undercutting you because you give good after sales service and they don t If you re a box-shifter it means the companies who ve been taking end users for a ride are getting their deserved comeuppance, and will either have to shape up (ie, cut their prices) or ship out

Either way the newborn commodity market will have drastic implications for the home user At one end companies like Amstrad (other such companies can be counted on the fingers of one leg) can squeeze home-based companies like Sinclair out while at the other end they ll be able to turn CP/M and MSDOS into mass market systems, cut out the likes of IBM who are bound to get sniffy about becoming home computer manufacturers and tomorrow the world?

But before we get carried away with thoughts of an Amstrad compatible world it s worth considering what that world will in fact consist of The master plan is shakiest at the home end where the lion s share of Amstrad s presence is accounted for by the Spectrum, and where the Spectrum Plus 2 would have to obliterate the Commodore 64 in order to achieve domination

Further upmarket with the PCWs and the soon to be launched PC Amstrad s position is superficially more dominant, but here the company could find itself challenged due to its own success Amstrad can put together a package of other people's products and sell it cheaply but then so can anybody else And just as Amstrad licenses its machines' operating systems, so can anybody else

Compatibility itself could also turn out to be something of a red herring in this market Amstrad has contrived to sell the PCW to people who would otherwise have bought a typewriter and provided manufacturers can produce a cheap machine that includes bundled word processing software, and perhaps database and spreadsheet programs for more specialised tastes the explosion of small business computers is unlikely to be matched by a software explosion In fact if like Memotech and Tatung, manufacturers produce new micros with a range of bundled software they needn t even be CP/M compatible (although these two are) because most users will already have all the software they want

Amstrad could therefore face competition from small outfits that can put together easily and cheaply purchased parts at the business end of its market, and those who remember Sir Clive Sinclair s entry to the micro market will understand this also has validity at the home/games end of the market In the long run, the company's only out will therefore be to make the leap to higher technology micros that smaller bundling-based outfits will be unable to manufacture And we all know what happens to Quantum Leaps

John Lettice

The Commodore's new alternative operating system

Peter Worlock concludes his investigation of Geos.

When Apple launched the Macintosh one of its shrewdest moves was to give away graphics and word processing software with the machine.

In the first place, *MacPaint* and *MacWrite* showed off the Mac in its best light and in the second, it allowed the Mac to be immediately useful to the buyer.

When Digital Research launched Gem, its own Mac-like operating system it bundled *GemWrite* and *GemPaint* in the package.

And so to Geos, Commodore's "alternative" operating system for the new-look 64 and 128. Berkley Softworks, the producer of Geos, has followed the trend and includes *GeoPaint* and *GeoWrite* in the package.

GeoPaint

The graphics program owes a great deal to *MacPaint*. A near-identical set of drawing tools are represented by icons on the left of the screen, a menu bar at the top includes extra facilities, and file operations. The obvious difference is in the use of colour (which the Mac doesn't have).

All of the now-usual features are included – pencil and paintbrush, line, box and circle tools, a fill facility supported by a wide range of patterns, a zoom function, and an undo command for quick changes of mind.

As with Geos itself, the biggest drawback of *GeoPaint* is the current lack of support for anything other than joystick. A joystick is perhaps the worst tool for graphics work, surpassed (in descending order of preference) by a graphics pad, a mouse or a light pen.

A second difficulty – and one that *GeoPaint* shares with Rainbird's *OCP Art Studio* (see *Popular* Vol 5 No 30) is that it supports only the 64's high resolution mode which can lead to severe problems with colour clashing.

It is possible to design complex colour pictures that avoid the problem but this involves painstaking planning before you start to use colour. Far better to have offered multicolour mode as an option.

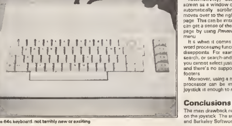
However, the lack of mouse support should be remedied soon by Berkeley Softworks and the high res problem is surmountable, so there's very little wrong with *GeoPaint*.

GeoWrite

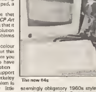
GeoWrite is more of a problem. It offers many features that other C64 word processors don't but it's also missing a few crucial bits.

On the plus side, you can select from any of Geo's five type fonts, in many different sizes and styles (for reference, *Popular Computing Weekly* is typeset in a 9-point typeface – there are 72 points to the inch).

Among the different fonts are the



The 64c keyboard: not terribly new or exciting



The new 64c

seemingly obligatory 1960s style computer font and an Olde English variety, as well as more useful – and readable – styles.

The style menu allows you to use text in bold, italic, underline and outline, or any combination thereof.

Furthermore, because *GeoWrite* is graphics-based you can paste pictures from *GeoPaint* into your *GeoWrite* documents.

This makes the program ideal for producing diagrams, posters, leaflets etc.

Although the 64 has only a 40-column screen *GeoWrite* presents a number of ways around the problem. For example, you could write your document in a small typeface, before reformatting it in a larger size.

Alternatively, *GeoWrite* uses the screen as a window on your document, automatically scrolling as your text moves over to the right-hand side of the page. This can be irritating, although you can get a sense of the overall look of the page by using *Preview* option from the menu.

It's when it comes to more common word processing functions that *GeoWrite* disappoints. For example there are no search, or search-and-replace functions, you cannot select justified right margins, and there's no support for headers and footers.

Moreover, using a mouse with a word processor can be irritating – using a joystick is enough to make you scream.

Conclusions

The main drawback remains the reliance on the joystick. The sooner Commodore and Berkeley Softworks realise this and

> *"All of the now-usual features are included in GeoPaint – pencil and paintbrush, line, box and circle tools, a fill facility supplemented by a wide range of patterns, and an 'undo' facility for quick changes of mind"*

get a mouse-driver out the better.

At the moment, because of this, *GeoPaint* ranks a verdict of Good, and with a mouse will rate at Excellent.

GeoWrite, however, currently ranks Poor and need much more than a mouse to improve on that. It is adequate for letter-writing, and superb for posters and the like, but you wouldn't want to write your doctoral thesis on it, let alone The Great Twentieth Century Novel.

Overall, then, the Geos package is an odd mixture. As an operating system it's a vast improvement on the naked 64, but it is a disc-only system, and you really need two drives (and a mouse) to get the most from it.

As a stand-alone product for existing 64 and 128 owners, Geos will stand or fall on its price. At the moment, no UK pricing or availability has been fixed. At around £30, it will represent a reasonable buy.

As a bundled package with the new 64c, the question of value is rather meaningless, but unless Commodore actually throws its full weight behind Geos – by putting it into Rom, and bundling the necessary hardware – it will remain little more than an attractive curiosity.

One thing Geos does is to answer the question, why buy a 16-bit computer? Geos pushes the 64 to its limits, and still comes up rather slow and inflexible. But if you want a Mac-like operating system, and can't afford a Mac, an Amiga or and Atari ST, this is as close as you'll get.

I liked Geos, despite its failings. I think it deserves a better deal than it's getting from Commodore at the moment.

An old keyboard in a new case

Far left (lower) the new 64c keyboard

Far left (upper) the keyboard and screen

Above left GeoWrite screen shot

Right From GeoPaint



The 64c: a 64 in a different case

When I first saw a picture of the 64c, and heard a rather garbled report from a witness at CES in Chicago, I got rather excited.

Hot damn, I thought. A machine that's better than the 64 and cheaper than the 128, I thought.

How wrong can you be?

Seeing the 64c in the flesh is disconcerting. It's rather like meeting an old friend who's had plastic surgery. You start to wonder what was wrong with the old model.

Actually, what was wrong with the old one was the awful Basic, the terribly slow disc drive, the lack of a proper serial interface, and the lack of a proper printer interface. All of these things are exactly the same in the 64c.

The keyboard is the same as the 64's, but in a lighter colour. The case is a hybrid version of the 128's – same colour and styling, but lacking the numeric keypad and extra function keys.

The 64c, quite simply, is a 64. In a new case. End of story.

What Commodore needs right now is a genuine successor to the 64 – now rapidly approaching its fourth birthday. The company might just have one in the 128D if it could remedy a few problems like lack of dedicated software and poor value for money.

The 64c can be considered as no more than a holding action – at best. How good that best will be depends very much on price.

With the 128 currently selling at £269 and the 128D with monochrome monitor at £499, and the 64 at £150 with cassette player, Commodore could launch the 64c at anything up to £175. And fail.

The problem is the 128. It should be selling for under £200, and the 128D should be no more than £350. And that means the 64c should be £125 at most. Including cassette player, software, and joystick.

When you can buy an Amstrad 6128 (disc drive, colour monitor) for £399, or an Atari 620 STM (with disc but no monitor) for £450, Commodore's 128 pricing looks a bit dim.

At the 64c's end, Amstrad will be launching the Spectrum Plus Two at nearer £100 than £200.

So the 64c has problems. It's the same machine that made Commodore the world's most popular manufacturer, but when the competition are moving forward with technology (like Atari) and with value for money (like Amstrad), Commodore looks to be standing still.


Evesham Micros
PRINTER OFFERS
Micro P. MP165
The best NLQ of any printer in the price range? Many people think so. This particular printer has been very popular recently and should win even more friends at this price. Very highly featured with 166 cps draft speed and a switch selectable NLQ mode at 70 cps. (Manufacturer's figures)
Standard features include friction and tractor feed, 2K buffer, Epson compatibility, quiet operation, and full graphics capability. This printer must offer the highest specification available for the price. Look at these unretouched actual size print samples
Superb near letter quality print and high draft speed make the MP165 an outstanding buy at this price.
Italics and good underlining along with many other print modes confirms the FACT.
THIS MUST BE THE BEST PRINTER OFFER IN THE COUNTRY
ONLY £219.95
Price includes printer lead to suit your micro
PANASONIC KX P1080
A sample of the impressive N.L.Q. from the Panasonic KX P1080
N.L.Q. available in Elite (12cpi) and italic modes.
Superb value from Evesham Micros
High quality from Panasonic
Two names you can trust
ONLY £199.99
STAR NL10
SUMMER SPECIALS
ATARI 1040ST mono £799.00
ATARI 1040ST colour
ATARI 520STM c/w SF354 Disk Drive £449.00
FREE THE PAWN WITH ALL ATARI S
OPUS DISCOVERY 1
CBM 128 computer
CBM music pack
CBM MPS803 printer
3" DISCS (suit Amstrad)
BOX OF TEN
EVESHAM MICROS
WORCS., WR11 4RY.
MICRO CENTRE
BIRMINGHAM.
Tel: 021-458 4564
POOLSWINNER
THE ULTIMATE POOLS PREDICTION PROGRAM
FIXGEN 86/7
NOW AVAILABLE
COURSEWINNER V3
THE PUNTERS COMPUTER PROGRAM
NOT JUST A TIPSTER PROGRAM
selec
37 COUNCILLOR LANE CHEADLE CHESHIRE 061-428 7425
ANCIENT & MODERN
CUT PRICE SOFTWARE
CUT PRICE SOFTWARE (DEPT 1), UNIT 8, STORT HOUSE
RIVERWAY, HARLOW, ESSEX

Amstrad software package a mixed bunch

Microfile is a database with a capacity of 64K of records, four key fields, each with a maximum length of twenty characters, four possible screen layouts (you design them yourself), a maximum report width of 117 characters and non-key record length of 80 characters.

The manual is ready to consult but the instructions are the package's worst enemy right from the start. For example, you are not told to press *Shift* with the function keys until page 11, which is most irritating and confusing. On the whole the instructions are understandable, but any advantage one might gain from the database are neither exploited nor fully explained. Examples given are fairly brief. We are not informed how to use a database. However, once started, *Microfile* turns out to be reasonably good at putting names and addresses on disc as well as generating simple reports.

Don't expect a marvellous piece of software. What you get is a limited yet flexible introduction to small databases, despite the confused manual!

On to *Microword*, a more flexible and useable piece of software. It has an auto-backup facility which you can switch off if it gets too irritating and can be used in conjunction with *Microfile*, using 'merge printing'. With this facility you can personalise letters and documents.

I've concentrated on *Microfile* as it's the small stumbling block in a package which is okay overall. One final point: Amstrad 6128 owners with only one disc drive will find the package a little more awkward than 8256 owners! Having two disc drives improves its usefulness.

Is it worth approx £40? At a push, maybe, but shop around.

Chris O'Toole

> **Program** *Microword/Microfile* **Micro** Amstrad with CP/M **Price** £39,95 **Supplier** Amsoft, Victoria House, PO Box 10, Sunderland SR1 3AV

Prospell on the Amstrad CP/M continues to amaze

Regular readers will know that I have already given an enthusiastic review to *Prospell* in its CPC incarnation so I won't go on again at great length here. This version of *Prospell* has been written to run under the CP/M-Plus operating system which means that it will also work on the CPC 6128. In truth it has really been designed with the PCW computer in mind, and it is designed to work with files produced by the *Locoscript* word processor.

Prospell will handle ordinary *Locoscript* documents (not just page image files) in any group and to any length. If the file is very long and you are trying to run everything in one drive you may have to change discs a couple of times – but then long files are a nightmare to create with *Locoscript* any way so you may not have these problems.

As well as *Locoscript* documents *Prospell* will also handle *Wordstar/Newword* format and Ascii text (eg *Tasword 8000* or any plain CP/M text editor) and it is very fast.

Unrecognised words can be changed, viewed in context, ignored or you can even ask *Prospell* to attempt to find the words in the dictionary that you may have been trying to spell in the first place.

The correct spelling of words can be found using wildcard for letters you are unsure of (also useful for crosswords). There is an anagram finder and also options for editing the dictionary, adding new words etc. Different dictionaries can be created for different technical subjects.

Prospell cannot correct misspelt words that happen to form something else that is legal eg oxen and Oxon, but even the most diligent proof readers miss things – especially if you are convinced you know the correct spelling. I've found it an absolutely invaluable aid so far and I'm sure it will be a boon to many *Locoscript* users.

Tony Kendle

> **Program** *Prospell* **Micro** Any Amstrad CP/M **Price** £29.95 **Supplier** Arnor Limited, The Studio, Ledbury Place, Croydon, Surrey

Basically powerful

Hisoft's compiler for Locomotive Basic is one of the fastest things I have come across on a home micro. Locomotive is far from a slow Basic and to produce code that can run from about 10 to 80 times faster is something that shouldn't be sneezed at.

Unfortunately anyone who has experience of compilers will be able to guess from the above speeds that *Turbo Basic* is an integer only compiler and any routine that uses floating point arithmetic will not work – for many programs this will not matter but remember that it also excludes things such as Cos and Sin. I do wish that it took a leaf from Ocean's *Laser Compiler* and given advice on things such as how to draw circles using integers only.

Other restrictions are that *Print Using* cannot be used, strings must be of a user definable fixed length that cannot be exceeded and system variables such as *time* and *Rnd* work in a different way.

The actual compilation is controlled by a memory resident program called by RSX basic commands. Longer things can be compiled to and from tape or disc.

In some ways anyone who writes a Basic compiler is on a hiding to nothing. It is never the sort of magic wand that many expect it to be and there are always more criticisms or omissions to mention than positive points. But as long as you don't expect to be able to compile your entire Basic collection you will find that *Turbo Basic* is a very powerful and breathtakingly fast tool.

Tony Kendle

> **Program** *Turbo Basic* **Micro** Any Amstrad CPC **Price** £14.95 **Supplier** Hisoft, The Old School, Greenfield, Bedford

Futurezoo's future looks cagey

I don't think an adventure has ever caused me such frustration in its first few locations as this one. It wasn't so much the first problem, which is quite straightforward, but that I was looking for something devious – and the program's unfriendliness did nothing to set me right.

Futurezoo's plot is a nice combination of detective story and sci-fi spread over two Quill-ed sides. There are some imaginative descriptions en route to the final goal, the recovery of the Great Seal of Senissa (which is not an aquatic animal!) but the puzzles themselves aren't too complex.

"I don't think an adventure has ever caused me such frustration as this one"

The first failing is the absence of Help, though CAS claim it's made redundant by their clue line. I'm sure most players prefer an instant reply to a postal one. Then there are unfriendly non-comprehensive messages coupled to a limited vocabulary. Finally there's the absence of Examine, which can in itself provide hints to object's uses, as well as adding greatly to a realistic atmosphere.

The name of the company and the nature of the adventure suggest a specialist firm catering for enthusiasts but too many details are wrong for me to recommend Futurezoo, especially at this price.

Popular Appeal ♦ ♦

John Minson

Program *Futurezoo* **Micro** Spectrum 48K **Price** £7.95 **Supplier** Clwyd Adventure Software, 14 Snowdon Avenue, Bryn-y-Baal, Nr Mold, Clwyd CH7 6XZ

Arac robotics react to disasters

When presented with a synopsis along the lines of 'multi-screen arcade adventure in which you must deactivate the reactor cores before they blow up', originality isn't the first word that springs to the mind.

Still, rest assured that *Arac* is well worth pursuing beyond the cassette label – load it up and you'll soon learn why it's been released from a company called Addictive.

Roughly speaking, you are given control of a multi-function robot (Arac) who can do little more than move left, right, jump up and down and fire a net. Not so good you might think, but to make things that little bit easier, half of the screens are inhabited by various animals which can be netted and enlisted to help you in your quest.

The process of netting involves great skill and timing and is beautifully done. In fact, if there was a prize for the most accurate computer simulation of the act of netting an alien animal then this would get it by a long chalk.

Furthermore, your relatively puny arac can be transformed into a powerful arachnidroid for short periods by finding various bits and pieces (like robotic arms, legs, power supplies etc) – very useful in times of great gaming stress.

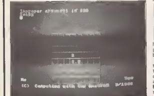
Collect your arachnidroid bits, assorted helpers and then on to the reactor citadel itself – only, considering this is a race against time, don't hang about.

Great graphics, original ideas and to boot a playable game. If you like your programs in the arcade adventure mould, then add this to your collection.

Popular Appeal ♦ ♦ ♦ ♦

John Cook

Program *Arac* **Micro** Commodore 64 **Price** £9.95 **Supplier** Addictive Games, 10 Albert Rd, Bournemouth, Dorset, BH1 1BZ



Bomb Scare from Firebird

Budget successes

It's good to see that the standard of budget software is increasing – slowly. Here we have yet another game that would have set you back £7–£8 18 months ago.

You (a robot) are placed in the cybernetically uncomfortable position of having to defuse an alien bomb – the action taking place inside an Earth base on Neptune. For this you must knock out the aliens while collecting various objects, some which can only be obtained... OK, no breathtakingly original gamesplay here.

The puzzles are fairly logical, but placed at a difficulty that will keep you at it for some time. Well worth the money.

Program *Bomb Scare* **Type** Arcade/Adventure **Micro** Spectrum **Price** £1.99 **Supplier** Firebird, 74 New Oxford Street, London WC2.

Virgin takes Richard for a ride

Virgin Games reckons everyone knows that the Virgin Atlantic Challenge team broke the transatlantic crossing record in June I must confess I had heard something about it

But now we can all take part in the exciting enterprise, thanks to a new game which goes by the snappy title of *The Virgin Atlantic Challenge Game*

In it you play the part of Richard Branson, or – as he is known on the inlay card RICHARD

As RICHARD receives alerts from the boat s computerised systems he must respond at BREAKNECK SPEED

' Sounds riveting, doesn t it?

But it isn't

You control RICHARD via keyboard or joystick On the Spectrum version, at least, RICHARD is a tubby bearded dwarf The reason why he is tubby is because he has to eat something every five minutes or he becomes slow and jerky This interferes with his performance because in addition to steering the boat and going as fast as possible, there are HAZARDS

In fact this is a very hazardous journey indeed For example, you will receive a telex alerting (or ALERTing) you

> *"This is a very hazardous journey indeed"*

to the presence of fog This is indicated by the appearance of a big fish in one of your windows

You ll also encounter icebergs (indicated by the appearance of a big fish in one of your windows), and fishing boats (no big fish – presumably it gets caught by the fishermen)

As you may have gathered, I was less than impressed by the *VACG* The graphics are attractive (even the sprite of RICHARD in an amusing sort of way) but there s simply not enough to the game to maintain interest

No doubt it will sell a few copies thanks to the recent publicity, but it isn t worth the asking price At £2 99 maybe, but not at the £7 95 Virgin wants

Popular appeal ◆
Peter Worlock

Program *The Virgin Atlantic Challenge Game* **Micro** Spectrum 48/128 **Price** £7 95 **Supplier** Virgin Games, 2–4 Vernon Yard, Portobello Road, London W11 2DX.

Jewels of Darkness shine brilliantly

Long ago, in the second age, the three great adventure quests had been solved, and their power chained, like Prometheus to a rock Now they have been let loose again which can only mean one thing – Rainbird Sorcerer s Apprentice of the Dark Lord Tel-E-Com had licensed the *Colossal Cave* trilogy from Level 9 and unleashed it on an unsuspecting world

The trio, *Colossal Adventure. Adventure Quest* and *Dungeon Adventure* has been polished up somewhat and collected under the title *Jewels of Darkness* Graphics have been added and the programs now sport an improved parser that can deal with multi command sentences, flash packaging in the Rainbird style and a 64 page novella Seasoned adventure players will recognise the latter as one of those ' the clouds of evil poured upon the lands of Aardvark at the behest of the Demon Lord of Wotsit scenarios either better or worse than the adventure depending on your point of view The saving grace of *Jewels of Darkness* is, however that the three adventures are indeed classics, well designed and entertaining to play

The games are related in that they re all set in a complex of mysterious caves which, despite their baleful influence on the surrounding environs, have somehow escaped a radical redvelopment programme by the local council *Colossal Adventure* is greed-led in that you are an adventurer bent on exploring the colossal cavern and returning dripping with untold wealth

Adventure Quest, the second part, is somewhat more altruistic The Demon Lord Agaliarept has taken refuge in the cave complex and must be destroyed before he enslaves etc *Dungeon Adventure* reverts to type as you re involved in a desperate dash to grab Agaliarept s stores of ill gotten gains (Demon Lord in question now being deceased) before the forces of light get there and spend it all on their social services budget

Nice simple plot skeletons and while the addition of graphics may irritate some purists they re not obtrusive, and can in any event be switched off if you want to just sit back and imagine If you re an adventure buff, and you don t already have the Level 9 versions of the games, you haven t really any choice Go out and buy *Jewels of Darkness* immediately, then lock yourself up for the next three months while you play through them

Popular Appeal ◆ ◆ ◆ ◆
John Lettice

Program *Jewels of Darkness* **Micros** Amstrad CPCs PCWs Commodore 64/128, Spectrum 48/128 **Prices** £14 95, except Amstrad disc £19 95 **Supplier** Rainbird Software, Wellington House Upper St Martins Lane, London WC2H 9DL.

Screen dump from Jewels of Darkness

Equinox tips

Tony Kendle offers more advice for arcade officianados

This week we are going to concentrate on the promised tips for *Equinox* that were provided by Mikro Gen. The beginners guide to hacking will take a back seat for now but will continue next issue

Regular readers will know that I think *Equinox* is one of the strongest games ever released by the company, even including the Wally series. These tips are given specifically for the Amstrad version of the game. For the most part they should hold true for the Spectrum version although references to colours should be regarded with a pinch of salt

In order to complete *Equinox* you will need to be able to survive the harmful aliens on each of the numerous levels, and collect a pass on each one. You begin the game with three lives and any contact with an alien will reduce your energy prolonged contact will result in the loss of one of these lives

"Each level contains a canister, a disposal chute and a level pass. You will have to collect the level pass in the given time in order to access the next level. To enable you to find the radio-active canisters and level passes you will need to use the tools and objects that have been scattered around each level. Once you have completed a level the timer indicator will change to a solid green bar which will indicate that all is safe

"In order to eradicate all danger to the complex you will need to have collected all eight canisters and dispose of them before the humans can settle in their new surroundings

More specific tips follow. "Before a teleporter can be used a teleporter credit (cyan disc) must be spent at the required teleporter

To spend a teleporter credit make sure you are holding one, sit stationary within a teleporter and press the use key

To teleport thrust up to the globe-like object in the teleporter and you will be teleported to the second teleporter terminal

"To use a trans-level transporter you must be holding a numbered level pass. Select the desired level by moving your droid on to the corresponding select button and then press the use key

The trans-level teleporter will only give access to levels which are less than or equal to the level pass that you are currently holding. Exit the trans-level teleporter by touching the door

The following tips will explain how to complete level one. This is a relatively easy level as the canister is already accessible when the game starts

The first task is to get a teleporter credit and take this to pay the teleporter. Use the teleporter to find a hand drill and teleport back again. Enter the magnetic lift to get back up to the top and use the drill to open the safe

"Next get the dynamite and take this to clear the pile of rocks. Once through this you should find a new teleporter credit so use this to pay the teleporter. However before you use the teleporter get the radio-active canister. With this in your possession get to the teleport destination again and you will find the disposal chute. Get rid of the canister down the chute

"Return through the teleporter. Get the key from the start room (mind your fuel) and use this to open the door through which you will find a level two pass. Locate the trans-level transporter and select level 2"

That should be of help to anyone who really can't get going with the game but after level one you are on your own. If anyone produces a complete solution don't forget to let us know

The ins and shoot-outs of Adventure Soft UK's Fleet

Tony Bridge returns from holidays on a Rebel Planet starship

Is space – the final frontier? Not for adventurers indeed, it is just the beginning for many stories and a new program from Adventure Soft UK carries on in the grand tradition. The story of *Rebel Planet* starts on board the spaceship Caydia at the start of your secret mission to the very heart of the evil (isn't it always?) Arcadian empire.

Your task, undertaken at the behest of the Earth-based secret organisation SAROS (the Search and Research of Space Organisation) is to scour, using the disguise of merchant, the Arcadian planets of Tropos, Halmurus and Arcadian. Somewhere on these planets, you will make contact with other spies who will have vital information for the second stage of your mission – the finding and breaking of the code to destroy the queen computer before it destroys you.

"The graphics used for each location are the best around"

That's the scenario and the first location is the bridge of the Caydia. As we've come to expect from what used to be Adventure International (*Gremlins*, the *Questprobe* series, *Seas of Blood* as well as the Scott Adams series) the graphics used for each location are the best around. However, these are set against a glaring white background which makes the descriptions and input tiring to read. I have to admit that I have never been the greatest fan of adventures from this quarter – while the puzzles are among the hardest and most diverting, the location descriptions are so brief as to destroy any atmosphere that might be present in the storyline. Together with the very linear style of gameplay (you *must* solve *this* puzzle before going on to the next locations and the next puzzle) I've found this has made *Questprobes* and so on very hard to play. But *Rebel Planet* marks a departure, in my opinion there is a great deal of exploring to be done in this early part of the story, with plenty of objects and plenty of little situations to be sorted out. Some of these objects are of use, while others are red herrings, the situations can become rather more pressing.

You'll need to keep your energy levels up, for example, and this can be achieved quite logically, but, of course, finding out how to do this prevents you, to start with, from carrying out all the exploration needed. But the most urgent problem at this stage is that the ship is going to take off in a certain amount of time, and it may be that, while exploring, you will miss the boat!

The story apparently follows that of the fighting fantasy book from which it is taken, but I haven't seen the book, so I don't know whether this might be of help or a hindrance.

"The story follows that of a fighting fantasy book"

Although the story can be played out using the two-word, noun/verb input, the program will accept longer commands, which is another change for the better. Much of the usual vocabulary is supported, with the addition of a couple of unique facilities: the game is played in real (Arcadian) time, and so a pause of five, ten or 20 segments may be selected, while *Advance CT (Caydia Time)* or *Retard CT* can be useful (with certain restrictions) in timing the ship's takeoff to the next planet.

ADVENTURE HELPLINE

Dragontorc on Spectrum I have four crowns, but cannot destroy them on the anvil with jewel of antithought. D Falcus, 13 Avenue Terrace, Ashbrooke, Sunderland, Tyne and Wear.

Borrowed Time on Commodore 64 How do you get the car from the Snles car park? Dave Roe, Linden, The Mall, Lismore, County Waterford, Eire.

Hitch Hikers Guide to the Galaxy on Commodore 64 How do you open the screening door on the heart of gold? Dave Roe, Linden, The Mall, Lismore, County Waterford, Eire.

Circus on Commodore 64 How do I move the tiger? I have a whip. Len Shuttleworth, 12 Richborough Close, Orpington, Kent BR5 3TQ.

Hampstead on Spectrum I've got the screw-driver from the desk. What now? Mark Strain, 91 Longmuirhead Road, Auchinloch, Kirkintilloch, G66 5DJ.

Bored of the Rings on BBC B I can't get past the black riders. Duncan Jones, 39 Long Reach Road, Cambridge CB4 2UG.

Red Moon on Spectrum How do I get past the dog, and how do I stop the monsters' ghosts from constantly appearing? David Edgar, 1 High Parksail, Erskine, Scotland PA8 7HY.

Lord of the Rings on Spectrum I have reached Weathertop, but I don't know what to do now. Please help. David Edgar, 1 High Parksail, Erskine, Scotland PA8 7HY.

Adventure Helpline

Going bananas? If you are stuck in an Adventure with nowhere to turn do not despair – help is at hand.

Fill in the coupon, explaining your problem, send it to us, and a fellow adventurer may be able to help.

Remember – the system only works if those adventurers who have solved the puzzles get in touch. Every week is Save An Adventurer Today (SAAT) week!

Adventure .... **on (Micro)** ....
Problem ....
....
Name ....
Address ....
....



The whys and wherefores of various viewdata

David Wallin communicates with the readers

More queries to be answered this week Keep the letters coming in or alternatively, use the *Popular* Communications section of the Prometheus bulletin board (01-300 7177) as explained in Communications July 24

Tom Boyle of Acomb York has a number of comments to make about networking Prestel is too expensive – I left because I couldn t afford the £60 per year plus phone bills

Of course expense is one of the problems But don t forget that it s a local call for about 98% of users so phone charges are less than for a long distance call to a bulletin board and Prestel does contain masses of information

Prestel is slow and laborious to use, it can take a long time to get to a desired page Why doesn t Prestel use keyword searching like the newer viewdata systems?

About the speed of use, this is true but you can usually jump to a page by typing **page-number#* Keyword searching is on its way for Prestel, however

Most FBBS boards have weird names (eg Compost Heap) I would rather dial something like Compost Heap than CBBS-SW Wouldn t you? A catchy name would get more people ringing that board rather than some board with just plain letters

I agree, CBBS TBBS etc are boring names for boards but many of these boards are in fact very good

Tom goes on to ask some questions about BBs How does the messaging section of a Board work and how does the BB memorise your name, etc, when you first log on?"

The answer Tom, is file-handling, to both your queries Basically, file handling is a method of saving and reloading variables to a disc If the name is held in variable *A$* then a BBC Basic routine to save this would look something like this,

```
10 A$  Tom Boyle
20 X=OPENOUT( user )
30 PRINT #X A$
40 CLOSE #X
```

To reload this a similar routine is used,

```
10 X=OPENIN( user )
20 INPUT #X A$
30 CLOSE #X
40 PRINT A$
```

The above is a very simple routine, but if you can program in Basic fairly well then it shouldn t be too hard to write a full messaging/log-on file saving routine One thing to note, File-handling is only worth using on disc computers cassette tapes being far too slow Most computers using cassettes do not offer file handling and one of the main purposes of a DFS (disc filing system) is to provide file-handling techniques

One last comment Tom made was that telecommunications in general not just Prestel, can be very expensive True communicating via a modem over the phone lines is expensive but if you have more capital a radio modem is worth thinking about Radio modems RTTY Packet, CW, AX 25 and Call Signs are another part of micro communications and I will be looking into them in more detail in the future For more information now then contact

RSGB Viewdata Board 0707-57477 (RSGB is the Radio Society of Great Britain)

AMRAC Bulletin Board Section 0376-518818, 300/300 baud G6DLJ (secretary of AMRAC) Prestel Mailbox 703847754 AMRAC = Amateur Radio and Computers

PA Brown of the Salvation Army has written wanting to know if the Protek 1200 modem for the Commodore 64 will work on a Commodore 128 in 64 mode and also whether it would work in 128 mode Well Mr/Ms Brown, I'm 99% certain it should work in 64 mode The interface and O/S on the 128 in 64 mode are the same as the 64 and so technically you have the same machine and in theory the two should be 100% compatible

As to working in 128 mode, again, it should but you may need to write/purchase some new software I assume you are interested in the Protek because it is so cheap but don't forget there is also the Commodore Modem It s hard wired not acoustic and will work on both the 128 and 64 It does cost a bit more, £79 99, but includes a Compunet subscription worth £30, and may be worth a look at Details from Commodore UK at, 1 Hunters Road, Weldon, Corby, Northamptonshire NN17 1QX

Mr M D Forrest of Sheffield writes saying he has an Amstrad PCW8256, serial Interface, Mail232 software, BBC B, Commstar software and a Pace Nightingale modem (*I wish I had all that!*) He has two questions

Can you recommend any PCW8256 communications software, and can the Nightingale leave E Mail to a friend in the USA?

Yes, and yes, Mr Forrest For the Amstrad PCW8256 I highly recommend *Comm+* from Modem House *Comm+* is so powerful, that it is advertised not just as communications software but as a Communications Processor It has six emulations including graphic viewdata very advanced XModem style protocols and loads of other features

I use *Comm+* all the time and find it very good, though it is a little complicated and comes with a 245 page manual! *Comm+* for the 8256/8512 costs £86 25 (inclusive of Vat)

If you can't afford £85 for comms software then the famous *Modem7* program is available for free *Modem7* (the UK version is called *UKM7*) is possibly the most well known piece of public domain software there is It is available from CBBS SW Bulletin Board from the CP/M download section (*8256UKM7* is an 8256 installed version) CBBS SW is on 0392-53116, 8N1, 300/300 1200/1200, 1200/75 Alternatively dial 0767 50511 8N1, 300/300 This is the number of the UK CP/M User Group Bulletin Board It will be able to advise you of how else you can get the software if you have downloading troubles

Almost any modem will enable you to leave E-Mail to the USA It all depends how you send it

You can use MicroLink (Telecom Gold) to send international E-Mail to the USA If your friend uses a Dialcom compatible E-Mail service in the USA then you can leave E-Mail with the TG computer in the UK and it will transfer the mail to the USA computer

You also asked if the switch four on the Nightingale (CCITT/Bell switch) which is blanked off could be rewired or somehow made to work If you telephone Pace and ask for the technical enquiries department they may be able to help I don t wish to tell readers to take apart a modem and re-wire it, in case something goes wrong Also adding Bell tones will un-BT approve your modem


CASH-IN ON
YOUR TALENT
Richard Darling
Richard and David Darling – top selling games writers, Programmers of the Year 1984, USA Award winners 1985, over 1.5 MILLION games sold to date, including their latest hits – Last V8 and Master of Magic ... are now expanding their operation and marketing games through their own label.
"We will pay £2500 advance royalties for high quality original games.
We are programmers – we know what makes a good, top selling game. If you can write good games, or conversions, we can help you make some real money. We can give any programming assistance you might need and supply music, graphics etc.
If you want to cash in on your talent, contact us now."
·D·I·G·I·T·A·L·
Digital Computers Ltd, Unit 1,
Beaumont Business Centre,
Beaumont Close, Banbury, Oxon. OX16 7RT
Tel: 0295 68426 Fax: 0295 58770
FASTER THAN LIGHT
MSX
MANORAGORE £14.95 – SPACE RESCUE £1.99
COMMODORE SPEECH MODULE
(FIRST COME FIRST SERVED) £16.99
FOOTBALL MANAGER
(C64, C16, SPECTRUM, AMSTRAD, ATARI) £6.69
SEND FOR AMSTRAD BUSINESS SOFTWARE LIST, ORDER EARLY TO AVOID DISAPPOINTMENT
FACULTY ENTERPRISES LTD
29 Rutland Court, Ponders End
Enfield, Midds EN3 48J 01-805 8054
MEGASTREAM LIMITED
WE GUARANTEE BEST TITLES AT DISCOUNT PRICES
AMSTRAD
BBC MICRO
COMMODORE 64/128
AUTHORISED DEALERS FOR DATALIFE DISKS
VERBATIM DATA BOX
COMPUTERS
WE ENSURE A FAST AND EFFICIENT SERVICE
Megastream Limited

Demonstrations, explanations and investigations

Mark Jenkins with news from the British Music Fair . . .

Despite some problems with the main computer music display (stolen vans, companies decimated by illness and so on) the British Music Fair had plenty to interest micro musicians Most of the new programs were devoted to specific equipment though – Kawai launched a new synthesiser module based on its K3 Freewave synth and a Hybrid Arts software package to help edit it, while Yamaha launched a new multi-timbral synth module, the FB-01, which needs a CX5 package to edit its sounds (you won t be able to buy the package for a while but the module has plenty of preset sounds)

Steinberg did launch one new package, the colour version of the Pro 24 composer Originally designed to run on the Atari 520/1040ST with a high-resolution monochrome monitor Pro 24 can be adapted for a medium resolution colour display only at the expense of some of the detail on the main screen Still the program is a very powerful one, capable of controlling 24 polyphonic channels of synthesisers at once and so a little switching about to gain the benefits of a colour display is far from unacceptable

Mick Jones of Joreth Music turned out to demonstrate his Commodore 64 packages which include a real time and step time composer and a Casio CZ Editor, and showed his own powerful Joreth interface while admitting that most functions of the packages would run on other cartridge port interfaces However, the sync possibilities of the Joreth, which include Midi and non-Midi drum machines, are valuable under many circumstances

Not seen at the fair was the Dinosaur Software *Music Link* which derives from the trend for linking two micros for two-player flight simulators and other games The *Music Link* control program on disc or tape comes complete with a Din cable to connect two BBC micros via their RS423 ports, doubling the number of sound channels available for composing Up to eight voices can now be played back on the two micros with four channels transferred via the RS423 port and a sync pulse keeping the micros in time with each other despite inevitable slight variations in clock speed The control program is also sent down the RS423 port so only one of the two computers needs a disc drive or tape player

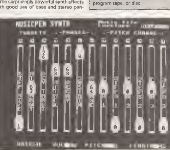
Dinosaur also markets *Music Pen* which is a synthesiser/music notation/chaining package compatible with a light pen and residing on a Prom *Music Link* is £9 including the cable and *Music Pen* is £28 75 both being available by mail order Contact Dinosaur Software at 41 Chaney Way, Chesterton Cambridge CB4 1UE (0223 322244)

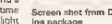
Mark Westhenll of Leighton Buzzard has been experimenting with the Acorn Music 500 for the BBC B and has sent in a tape with six of his best pieces As he points out, the 500 isn t very good at percussion since it can only combine two waveforms in FM or Ring modulation ', however, he's created some good splashy cymbal effects on *Seconds Out* and on *Submission* which also features good use of the 500 s glide effects

Ice-Cube and *The Train Song* have some surprisingly powerful synth effects with good use of bass and stereo panning, while the final piece, a short rendition of Bach s *Jesu Joy Of Man's Desiring* scored from sheet music, uses more basic sounds and only a small selection of note values But overall the tape is a good demo of some of Music 500 s possibilities, and, of course, it will shortly be possible to upgrade the system to the Music 5000 spec which promises even more powerful sounds If any other Acorn 500 users would like to swap tapes with Mark we ll be happy to pass them on

Mark also asks whether there's any chance of publishing a guide to writing music on computers as opposed to just generating sounds Anybody else interested?

If you have any queries or tips for this column please write to Mark Jenkins at *Popular Computing Weekly*, 12–13 Little Newport Street London WC2H 7PP Mark would also welcome examples of your own music on audio or program tape, or disc





Screen shot from Dinosaur Software's Music Pen a synthesiser/music notation/chaining package

Go sub for it!

Mark Butler explains how to use subroutines

Subroutine libraries are quite possibly something you have never read or heard about before I find this surprising as I cannot see how any programmer manages without them.

You probably *have* read a great deal concerning structured programming Should programmers write their programs using named subroutines, for instance procedures and functions, or using *Goto* s jumping around the program? The fact is, procedures and *Goto* s both have their place There is a good reason to divide your programs up into labelled procedures instead of less obvious *Goto*'s, but on the other hand there is no need to reinvent the wheel

Whenever you write a program, you should debug it and break it up into subroutines You can then put these routines into a library, so when you write another program you can just select some routines from the library leaving you with less to program The routines will already be debugged so you can concentrate on writing the top end of your program – what it actually does, not the menus, the screens or any other tasks which most programs have to do You are no longer reinventing the wheel – rewriting routines every time you write a program

Having read this you will probably be stunned (at least I was when I first learned about subroutine libraries) They are like most brilliant ideas, so *obvious* Why did you never think of programming this way before? Isn t it dreadful all that time you have wasted because you kept having different sorts of keyboard interfaces which you had to think up, type in, and then debug All of those of you who know how to program, have good ideas but can never bring yourself to plan programs out because of the drudgery it involves – this will put the creative fun of computing back for you! You don t even have to be a brilliant programmer to have a good subroutine library Good magazines are packed full of programs just waiting to be split up and made into subroutine libraries Just think of the many programs you can now write when you don t have to debug all those simple things

So why haven't you heard of subroutine libraries before? Who knows? Many magazines seem to ignore them at the best of times, and at the worst they attack them Others gang up on structured programmers and their teachings of reasons like if structured programming is so good why do the two top selling machines (the Spectrum and Commodore 64) not allow *Proc* s and other structured programming features? In fact they do Structured programming and programming libraries are a way of writing programs which can be achieved on most machines in most languages even on a ZX81

What is worse still there are two languages in common use which are centred around subroutine libraries *Logo* and *Forth* which also receive a rough time The first Logo is condemned as a



language for children a great shame as it is one of the most powerful languages you can run on a home micro. It has many of the features of its parent language Lisp, and powerful graphics functions It is therefore far easier to write an expert system in Logo than in 'advanced' languages like Pascal and Fortran If you have learnt Basic and want to go into a computer language with a bit more power I would advise Logo

The other Forth, does slightly better, but is still condemned as a language for control purposes – quite wrongly, as it has many other uses

Having said this, I must be honest and say I use 6502 assembler for most of my programming I can speak a smattering of both Logo and Forth Even though I don t use them for programming, I have learnt a great deal about programming just by tinkering with them They are in my view very impressive and well designed languages But like me you will probably want to stay with the language you are using for programming So how can you use subroutine libraries? Well I cannot instruct you on every dialect but as an example I can show how to set them up in Sinclair Basic

A Spectrum allows subroutine libraries to be set up with reasonable ease It includes a *Merge* command which allows you to load in subroutines into your program code The first thing is to decide on a line numbering scheme You will have to fit the following sections into your code

1) Routine to initialise variables
2) Program Code
3) Program Subroutines
4) Library Subroutines

The subroutines can be taken out of old programs and *Merge* used to spool them in the new program Be careful either to have a line renumbering utility ready or to carefully organise the subroutines so they don t use conflicting line numbers The most important thing is to carefully document your subroutines For example you could have a menu routine, like the one shown here

The *Rem* statements clearly state what the subroutine does and how data should be passed to it The routine centres all text, prints it and includes error trapping It is a good example for a subroutine which is used quite often You can just take it 'off the shelf' in working order so no debugging is necessary Try making your own library and see what a difference it can make to your programming

```
1000 REM MENU SUBROUTINE
1001 REM you should have a DATA statement before the GOSUB calling
this routine  The line should contain the menu name.the number of the
choices all the choices
1002 REM followed by the line number of the subroutine indicated by
each corresponding choice.
1003 REM A typical call would be
     DATA"Main Menu" 4 "SAVE" "LOAD" "DELETE","EXIT",100,200,300 400
     RESTORE <line number of data>
     GOSUB 1000
1004 REM So for example selecting LOAD will make the program jump to
line 200  or selecting EXIT will make the program jump to 400
1005 REM It is important to restore the data statement before calling
the menu routine  The routines which perform the menu functions .eg
100  200, 300 and 400 should finish in with a RETURN command so they
return back to the place they were called
1006 READ A$:CLS:LET B=16-(LEN A$/2) PRINT AT 0 B;A$
1007 READ C:FOR A=1 TO C
1008 READ A$:B$=STR$ A+" "+A$:PRINT AT A.1;B$:NEXT
1009 INPUT A:IF A>C OR A<1 THEN GO TO 1008
1010 FOR B=1 TO A:READ ROUTINE:NEXT
1011 GO TO ROUTINE
```



Space war on BBC

by Mark Ward

This week features part two of the listing and the first half of the instructions. Next week sees the conclusion of Space War including the table 1 referenced in the text.

Movement — Normal (3rd column table (1)). Each ship has a movement value of between 3 and 7. This value gives the maximum number of squares a ship can move during its go. Movement can be forward, backwards, up or down but each individual ship is allowed to move in only one direction during a go.

You do not have to move your full movement value — indeed you do not have to move at all during a go! You cannot end a ship's go in a square already occupied by a ship of your own fleet.

Controls — The cursor keys control your movement.

The copy key sets your move.

Hyperspace movement (4th and 5th column table (1)). Some ships, scouts, H B ships and H Q ships are capable of hyperspace travel. Hyperspace movement can be used in addition to normal movement during a go. It can only be used in one direction — forward, but if used in conjunction with normal movement permits you to move your ship in more than one direction during a go. Upon selecting hyperspace your ship will move forward to one of two possible positions (as indicated by the 2's in column 5 of table (1)). It will either move to your intended position — forward the number of spaces given by the hyperspace value, or because of the inaccuracy in hyperspace drives one short of that position. You only have one attempt at hyperspace per go. A hyperspace that would result in you leaving the board or colliding with one of your own ships is illegal and results in your losing hyperspace capability for that go. Controls — the H key selects hyperspace.

```
770G%=FNx(n%):H%=FNy(n%)
780PROCle
790IFJ%=0VDU7:GOTO840
800L%=L%+1
810MOVEFNx(n%),FNy(n%)
820GCOL3,1:PRINT"M":GCOL3,3
830m%(L%)=ps%(n%):C%=1
840ENDPROC
850DEFPROCle
860J%=1
870M%=ABS(E%-G%):N%=ABS(F%-H%)
880IFM%<>0ANDN%<>0J%=0
890IFM%>mv%*40J%=0
900IFN%>mv%*40J%=0
910ENDPROC
920DEFPROCauto
930GCOL3,2
940IFsh%(9)=0O%=ps%(10)MOD31:P%=ps%(10)DIV31ELSEO%=ps%(9)MOD31:P%=ps%(9)DIV31
950FORn%=31TO60
960IFsh%(n%)=0GOTO1340
970T$=ty$(ABS(sh%(n%))):Q%=ps%(n%)MOD31:R%=ps%(n%)DIV31
980IFsh%(n%)>0PROCs_up(T$)
990mv%=VAL(MID$(T$,10,1)):S%=0
1000FORo%=-mv%TOmv%
1010IFo%=0GOTO1140
1020J%=1
1030IFo%>0q%=0ELSEq%=-1
1040IFo%>-1r%=-1ELSEr%=1
1050IFps%(n%)MOD31=0ANDo%>0GOTO1090
1060FORp%=o%TOq%STEPr%
1070IF(ps%(n%)+o%-p%)MOD31=0p%=q%:J%=0
1080NEXT
1090IFJ%=0GOTO1140
1100FORm%=1TO30
1110IFps%(m%)=ps%(n%)+o%PROCat(o%):m%=30:o%=mv%:GOTO1130
1120IFps%(m%)=ps%(n%)+o%*31PROCat(o%*31):m%=30:o%=mv%
1130NEXT
1140NEXT
1150IFS%=1GOTO1270
1160T%=ABS(O%-Q%):U%=ABS(P%-R%)
1170IFT%<U%GOTO1200
1180IFU%<mv% move%=(P%-R%)*31ELSEmove%=mv%*31*(P%-R%)/U%
1190GOTO1210
1200IFT%<mv% move%=O%-Q%ELSEmove%=mv%*(O%-Q%)/T%
1210FORm%=1TO14
1220IFmove%=0m%=14:GOTO1260
1230IFABS(move%)>30V%=31ELSEV%=1
1240IFps%(n%)+move%=m%(m%)move%=(move%*-1*V%/ABS(move%))+move%:m%=1:GOTO1220
1250IFps%(n%)+move%=ob%(m%)ORps%(n%)+move%=ob%(m%)+31ORps%(n%)+move%=ob%(m%)+62move%=(move%*-1*V%/ABS(move%))+move%:m%=1:GOTO1220
1260NEXT
1270FORm%=31TO60
1280IFm%=n%GOTO1300
1290IFps%(m%)=ps%(n%)+move% move%=0
1300NEXT
1310ps%(n%)=ps%(n%)+move%
1320MOVEQ%*40+24,R%*40+174:PRINTFNsp(T$,n%)
1330MOVEFNx(n%),FNy(n%):PRINTFNsp(T$,n%)
1340NEXT
1350ENDPROC
1360DEFPROCat(o1%)
1370S$=ty$(ABS(sh%(m%)))
1380Y%=VAL(MID$(T$,16,1)):Z%=VAL(MID$(S$,16,1))
1390IFY%=1:IFZ%=2ORZ%=3ORZ%=4ORZ%=5ENDPROC
1400IFY%=7:IFZ%=1ENDPROC
1410IFY%=6:IFZ%=1ORZ%=7ENDPROC
1420IF(Y%=5)OR(Y%=5):IFZ%>Y%ENDPROC
1430move%=o1%:S%=1
1440ENDPROC
1450DEFPROCs_up(a1$)
1460HO%=2
1470PROCprint(230,130,2,8):PROCprint(230,90,16,1):PROCprint(230,50,15,1)
1480PROCprint(780,130,10,1):PROCprint(780,90,11,1):PROCprint(780,50,12,1)
1490L$=a1$
1500ENDPROC
1510DEFPROCprint(a1%,b1%,c1%,d1%)
1520MOVEa1%,b1%:PRINT;MID$(L$,c1%,d1%):MOVEa1%,b1%:PRINT;MID$(a1$,c1%,d1%)
1530ENDPROC
1540DEFPROCcheck(f1%,g1%,h1%,i1%)
1550FORp%=f1%TOg1%
1560IFsh%(p%)=0GOTO1730
1570T$=ty$(ABS(sh%(p%)))
1580FORm%=1TOL%
1590IFps%(p%)=m%(m%)ANDVAL(MID$(T$,14,1))=1m%(m%)=-2
1600IFps%(p%)=m%(m%)ANDVAL(MID$(T$,14,1))=0PROCdead(p%):GCOL0,1:MOVE(m%(m%)MOD31*40)+24,m%(m%)DIV31*40+174:PRINT"M"
1610NEXT
1620FORm%=1TON%
1630IFps%(p%)=ob%(m%)PROCdead(p%)
1640NEXT
1650FORm%=h1%TOi1%
1660IFsh%(m%)=0GOTO1720
1670IFps%(p%)=ps%(m%):PROCsp:PROCsp
1680IFVAL(MID$(T$,15,1))=0 GOTO1720
1690IF(ps%(p%)=ps%(m%)-1ANDps%(p%)MOD31<>30)OR(ps%(p%)=ps%(m%)+1ANDps%(m%)MOD31<>30)OR(ps%(p%)=ps%(m%)+2)OR(ps%(p%)=ps%(m%)-2)PROCsp
1700IF(ps%(p%)=ps%(m%)-30ANDps%(p%)MOD31<>30)OR(ps%(p%)=ps%(m%)+30ANDps%(m%)MOD31<>30)PROCsp
1710IF(ps%(p%)=ps%(m%)-32ANDps%(p%)MOD31<>30)OR(ps%(p%)=ps%(m%)+32ANDps%(p%)MOD31<>0)PROCsp
```

```
1720NEXT
1730NEXT
1740IFps%(9)=-1ANDps%(10)=-1PROCend("lose")
1750IFps%(36)=-1ANDps%(40)=-1ANDps%(43)=-1ANDps%(47)=-1PROCend("win")
1760ENDPROC
1770DEFPROCsp
1780IFA%=1X%=m%ELSEX%=p%
1790IFsh%(X%)=0ENDPROC
1800S$=ty$(ABS(sh%(X%)))
1810GCOL3,2:MOVEFNx(X%),FNy(X%):PRINTFNsp(S$,X%)
1820sh%(X%)=sh%(X%)*-1
1830MOVEFNx(X%),FNy(X%):PRINTFNsp(S$,X%)
1840ENDPROC
1850DEFPROCba
1860IFA%=1T$=ty$(ABS(sh%(p%))):S$=ty$(ABS(sh%(m%)))ELSET$=ty$(ABS(sh%(m%))):S$=ty$(ABS(sh%(p%)))
1870Y%=VAL(MID$(T$,16,1))
1880Z%=VAL(MID$(S$,16,1))
1890IFA%=1ANDZ%=1ANDY%=6ORY%=7)PROCdead(p%):ENDPROC
1900IFA%=1ANDY%=1AND(Z%=6ORZ%=7)PROCdead(m%):ENDPROC
1910IFA%=2ANDY%=1AND(Z%=6ORZ%=7)PROCdead(p%):ENDPROC
1920IFA%=2ANDZ%=1AND(Y%=6ORY%=7)PROCdead(m%):ENDPROC
1930IFA%=1ANDY%>Z%PROCdead(m%)
1940IFA%=1ANDZ%>Y%PROCdead(p%)
1950IFA%=2ANDY%>Z%PROCdead(p%)
1960IFA%=2ANDZ%>Y%PROCdead(m%)
1970IFY%=Z%PROCdead(p%):PROCdead(m%)
1980ENDPROC
1990DEFPROCmer
2000IFW%=10ENDPROC
2010W%=W%+1
2020ob%(W%)=W%+RND(12)*31+3
2030MOVEob%(W%)MOD31*40+24,ob%(W%)DIV31*40+174:VDU244
2040GOTO2000
2050ENDPROC
2060DEFPROCmm
2070GCOL3,1
2080FORn%=5TOW%
2090MOVEob%(n%)MOD31*40+24,ob%(n%)DIV31*40+174:VDU244
2100ob%(n%)=ob%(n%)+3:IFob%(n%)>... ob%(n%)=n%+3
2110FORm%=1TO500:NEXT
2120MOVEob%(n%)MOD31*40+24,ob%(n%)DIV31*40+174:VDU244
2130NEXT
2140FORn%=1TO...
2150FORm%=1TOW%
2160IFps%(...)=ob%(n%) ... dead(...)
2170NEXT:NEXT
2180IFps%(9)=-1ANDps%(10)=-1PROCend("lose")
2190ENDPROC
2200DEFPROCdead(e%)
2210IFe%... GCOL3,3ELSEGCOL3,...
2220SOUND0,1,6,8
2230T$=ty$(ABS(sh%(e%)))
2240MOVEFNx(e%),FNy(e%):PRINTFNsp(T$,e%)
2250GCOL3,0
2260FORe%=...
2270FORd%=-...
2280MOVEps%(e%)MOD31*40+(d%*40)+20,ps%(e%)DIV31*40+200+(d%*40):PRINT",;$t."
```


UXB

by Ian Grainger

Part two of the entertaining arcade style game in which you play Dynamite Dave the dynamic defuser

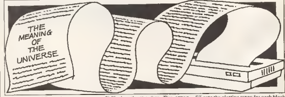
If you can't wait for part three send £2 to Ian Grainger, 33 Wellfield Road, Co Durham, TS28 5LA

```
545 LET a$=a$(2 TO 31)
550 LET h=15: FOR f=1 TO 3
560 PRINT AT 10,h; INK 1; PAPER 1;" ";CHR$ 8;: FOR n=1 TO 5: NEXT n: PRINT INK 6; PAPER 1;a$(h)
570 IF INKEY$="p" THEN LET h=h+1: BEEP .001,40: BEEP .001,30: GO TO 600
580 IF INKEY$="o" THEN LET h=h-1: BEEP .001,40: BEEP .001,30: GO TO 600
590 IF INKEY$="m" THEN LET h$(pos,f)=a$(h): PRINT AT 12,11+(f*2); INK 7;a$(h): BEEP .01,7: BEEP .01,12: BEEP .01,14: NEXT f: GO TO 630
600 IF h>30 THEN LET h=1
610 IF h<1 THEN LET h=30
620 GO TO 560
630 LET h(pos)=s...
639 REM Flags
640 INK 0: BORDER 6: RANDOMIZE USR 64200
650 PLOT 39,16: DRAW 0,114: DRAW 2,0: DRAW 0,1: DRAW 5,0: DRAW 0,-1: DRAW 2,0: DRAW 0,-114
660 PLOT 111,16: DRAW 0,138: DRAW 2,0: DRAW 0,1: DRAW -5,0: DRAW 0,1: DRAW 2,0: DRAW 0,-138
670 PLOT 183,16: DRAW 0,90: DRAW 2,0: DRAW 0,1: DRAW -5,0: DRAW 0,-1: DRAW 2,0: DRAW 0,-90
700 LET n=23: LET n=3: LET hn=4: GO SUB 9020
710 LET n=5: LET n=2: LET hn=6: GO SUB 9020
720 LET n=14: LET n=1: LET hn=3: GO SUB 9020
730 LET p=1: LET p1=0: LET i=6: LET i1=0: LET x=0: LET y=20: LET a$="   Press any key to play- UXB   ": GO SUB 9000
740 GO SUB 9500: GO TO 220
1000 REM Start up screen (Instructions)
1010 PAPER 6: BORDER 0: INK 7: CLS
1020 LET p=1: LET p1=0: LET i=6: LET i1=7: LET x=0: LET y=0: LET a$=" UXB by Ian Grainger (c) 1986 ": GO SUB 9000
1030 PRINT AT 3,9;"Q- Up";: BEEP .05,20: PRINT " A- Down": BEEP .05,20
1040 PRINT AT 5,7;"O- Left" : BEEP .05,20: PRINT " P- Right": BEEP .05,20
1050 PRINT AT 7 ...;"M- Jump": BEEP ...,2
1060 LET p=0: LET p1=0: LET i=6: LET i1=7: LET x=0: LET y=8: LET a$=" You are Dynamite Dave and have just been hired by the council to diffuse bombs in their local YTS training centre.": GO SUB 9000
1070 LET p=0: LET p1=0: LET i=6: LET i1=7: LET x=0: LET y=12: LET a$=" The centre is made - up of ten floors with five bombs being present on each floor.": GO SUB 9000
1080 LET p=0: LET p1=0: LET i=5: LET i1=7: LET x=1: LET y=15: LET a$=" Hazards include a variety of things from remains of previous diffusers to the worms crawling about the floor.": GO SUB 9000
1090 LET p=6: LET p1=0: LET i=1: LET i1=7: LET x=0: LET y=20: LET a$="   Press any key to play- UXB   ": GO SUB 9000
1100 IF INKEY$="" THEN GO TO 1100
1110 RANDOMIZE USR 64200
1120 RETURN
1999 REM initialise
2000 LET sc=0: LET li=3: LET c$="   ": LET d$="
2010 LET le=1: LET e$="
   ": LET f$="      "
2015 LET lost=0: LET d=12
```

```
2020 RETURN
2030 REM clear board
2040 DIM b(16,5): FOR f=1 TO 16: FOR n=1
 TO 8: LET b(f,n)=1: NEXT n: NEXT f
2045 LET ti=0: LET bo=5: LET tim=24
2050 RETURN
2999 REM Set up screen
3000 FOR n=0 TO 15 STEP 2: FOR f=0 TO 31
 STEP 2: PAPER 1: INK 0: PRINT AT n,f:"
  ";AT n+1,f:"  ": NEXT f: NEXT n: PA
PER 0: INK 7
3010 RANDOMIZE USR 64123: RETURN
3999 REM Level tune
4000 DATA .24,12,.25,23,11,.25,21,11,.1
2,19,11,13,21,11,.12,23,11,.13,19,.1,.2
5,21,9,.25,16,9,.25,12,9,.25,9,9
4010 RESTORE 4000: FOR n=1 TO 11: READ a,
b,c: FOR f=1 TO (a*30)/2: BEEP .01,b: B
EEP .01,c: NEXT f: NEXT n
4020 RETURN
4029 REM Death tune
4030 DATA 12,5,7,11,10,4,9,5
4040 RESTORE 4030: FOR n=1 TO 4: READ a,
b: FOR f=1 TO 15: BEEP .01,a: BORDER 7:
BEEP .01,b: BORDER 0: NEXT f: NEXT n
4050 RETURN
4059 REM End of game tune
4060 DATA 1,0.1,-1,1,-8,.5,-6,.5,-5,.5,-
6,.5,-8,.5,-9,1,25,-8
4070 RESTORE 4060: FOR n=1 TO 9: READ a,
b: FOR f=1 TO (a*30)/2: BEEP .01,b: BEEP
 .01,b+12: NEXT f: NEXT n
4080 RETURN
4999 REM Set up information window
5000 LET a$="
   ": PAPER 2: FOR f=17 TO 21: PRINT A
T f,0;a$;: NEXT f: PAPER 0
5005 LET a$=
   ": LET s$="
5006 LET tim=(bo-1)*5+10
5010 PRINT AT 17,1; INK 7; PAPER 2;"TIME
:"; INK 3;"    "; INK 5;a$( TO (bo-1
)*5);s$( TO (20-(bo-1)*5))
5020 PRINT AT 19,1; PAPER 2; INK 5;c$( T
O ti*2);"      ";AT 20,1;d$( TO ti*2);"
 "
5030 PRINT AT 19,10: PAPER 2: INK 6;e$(
TO bo*2);"         ";AT 20,10;f$( TO bo
*2);"
5040 PRINT AT 19,23; PAPER 2; INK 4;sc
5050 RETURN
```


Graph–ST

by Wail Sabbagh



There now follows the instructions for the data manipulating menu and the final part of the three part listing.

You should note that the program was designed for use in high resolution mode only using any of the other modes will cause the displays to become jumbled.

The data manipulation menu

The data manipulation menu offers the following options:

1) Line Graph This allows the user to display the data in the shape of a line graph. Several blocks can be plotted at the same time, blocks required for plotting are selected using the block state selector.

2) Bar Chart This option allows the user to display the data in the shape of a bar chart. Again several blocks can be plotted at the same time and the selection is done using the block state selector.

3) Block arithmetic data This option displays the following information on a selected block:

1) Number of items in block
2) Total value of all items
3) The average item value
4/5) The standard deviation and the variance
6/7) The maximum and minimum value

As only one block can be selected, selection is made via the block selector.

4) Data entry This option allows for data to be entered or added in a specific block.

5) Block edit Once a specific block has been selected, the user is moved to the editor menu or Graph-ST. This menu offers the following options:

1) Alter values in block
2) Change block name
3) Review content of block
4) Exit editor

6) Change Range As a default Graph-ST sets the plotting range for each block from one (ie the first item) to the last item. Graph-ST allows the user to change this plotting range for any block. For example, if a block contains the profit/loss figures of the year 1985 from Jan to Dec (ie range 1 to 12) the the user can select any new range in between the default range (eg 5 to 8 to select May to Aug). All plotting and scaling is now done according to the new range.

7) Save Data to disc This option allows the user to save his/her data file to disc for later use. Not only the data is stored but also any changes to the default plotting range and the current plotting state for each block (on/off).

8) New set off data This option simply moves the user to the data entry menu so the new data can be defined/loaded. As this option will delete all data in memory, a warning is given before execution.

```
5010 RANGE:    CLEARW 2:GOSUB SELECT
5020 IF COUNTER%(SL)<3 THEN ER$="NOT ENOUGH DATA IN BLOCK":GOTO REPORT
5030 CLEARW 2:X=20:Y=30:L=560:H=253:GOSUB BOX:FILL 1 1
5040 GOTOXY 4 3: PRINT"BLOCK : ";NAME$(SL)
5045 GOTOXY 4,4: PRINT"--------"
5050 GOTOXY 4,6: PRINT"CURRENT RANGE FROM : ";RANGE%(SL,1)
5060 GOTOXY 4,7: PRINT"                TO : ";RANGE%(SL,2)
5070 GOTOXY 4,9: PRINT"MAX RANGE ALLOWED : ";COUNTER%(SL)-1
5080 GOTOXY 4,12:INPUT"NEW RANGE FROM : ",A
5090 GOTOXY 4,13:INPUT"NEW RANGE TO : ",B
5100 IF A>B OR A<1 OR B>COUNTER%(SL)-1THEN ER$="ILLIGAL RANGE VALUE":GOTO REPORT
5110 RANGE%(SL 1)=A:RANGE%(SL 2)=B:GOTO MENU
5500 REM**********STORE DATA ON DISK**********
5510 STORE:GOSUB FILENAME
5520 OPEN "O",#1,FILE$
5530 PRINT#1,BL                    :REM NUMBER OF BLOCKS
5540 PRINT#1,IPB                   :REM ITEMS PER BLOCK
5560 FOR X=1 TO BL
5570 PRINT#1,NAME$(X)              :REM BLOCK NAME
5580 PRINT#1,COUNTER%(X)           :REM NEXT FREE SPACE IN BLOCK
5590 FOR Y=1 TO COUNTER%(X)-1
5600 PRINT#1,ITEM(X,Y)             :REM DATA ITEM
5610 NEXT Y
5620 PRINT#1,STATE%(X)             :REM BLOCK STATE (ON/OFF)
5630 PRINT#1 RANGE%(X,1)           :REM RANGE FROM
5640 PRINT#1,RANGE%(X 2)           :REM RANGE TO
5650 NEXT X:CLOSE #1
5660 GOTO MENU
6100 REM**********GET FILE FROM DISK**********
6200 RETRIVE:GOSUB FILENAME
6210 OPEN "I",#1,FILE$
6220 INPUT#1,BL
6230 INPUT#1,IPB
6240 DIM NAME$(BL),COUNTER%(BL),ITEM(BL,IPB),RANGE%(BL,2),STATE%(BL)
6250 FOR X=1 TO BL
6260 INPUT#1,NAME$(X)
6270 INPUT#1,COUNTER%(X)
6280 FOR Y=1 TO COUNTER%(X)-1
6290 INPUT#1,ITEM(X,Y)
6300 NEXT Y
6310 INPUT#1,STATE%(X)
6320 INPUT#1,RANGE%(X,1)
6330 INPUT#1,RANGE%(X 2)
6340 NEXT X:CLOSE #1
6350 GOTO MENU
6500 FILENAME:CLEARW 2
6510 X=20:Y=100:L=575:H=120:GOSUB BOX:FILL 1,1
6520 GOTOXY 4,07:PRINT "PLEASE ENTER FILE NAME (MAX 8 CHAR)"
6530 GOTOXY 4,9:PRINT CHR$(244)
6540 GOTOXY 4 10:PRINT CHR$(245);:INPUT ">",F$
6550 IF LEN(F$)<1 OR LEN(F$)>8 THEN GOTOXY 4,10:PRINT SPACE$(40):GOTO 6540
6560 FILE$=F$+".BRA":RETURN
7000 EXIT:CLEARW 2
7010 GOTOXY 10 4:PRINT "  THIS OPTION DISTROYS ALL DATA"
7020 X=100:Y=205:L=100:H=80:GOSUB BOX
7030 X=400:Y=205:L=100:H=80:GOSUB BOX
7040 GOTOXY 08 14:PRINT "MENU"
7050 GOTOXY 26 14:PRINT "NEW"
7060 GOSUB 12000
7070 IF BU<>1 THEN GOTO 7060
7080 IF MX>100 AND MX<200 AND MY>245 AND MY<285+40 THEN GOTO MENU
7085 IF MX>400 AND MX<500 AND MY>245 AND MY<285+40 THEN CLEAR:GOTO 100
7090 GOTO 7060
9999 GOTO 9999
12000 REM*********READ MOUSE**********
12010 A#=GB:CONTROL=PEEK(A#):GLOBAL=PEEK(A#+4):GINTIN=PEEK(A#+8)
12020 GINTOUT=PEEK(A#+12):ADDRIN=PEEK(A#+16):ADDROUT=PEEK(A#+120)
12030 GEMSYS(79)
12050 MX=PEEK(GINTOUT+2):MY=PEEK(GINTOUT+4):BU=PEEK(GINTOUT+6):RETURN
12060 REM BUTTON=PEEK(GINTOUT+6) IF 1 THEN LEFT
12070 REM IF BUTTON=2 THEN RIGHT:IF BUTTON=3 THEN BOTH
13000 REM**********DRAW BOX**********
13010 BOX:  LINEF X Y,X+L,Y:LINEF X+L,Y,X+L Y+H
13020 LINEF X+L,Y+H,X,Y+H:LINEF X,Y+H,X,Y
13030 RETURN
14000 REM*******SELECT BLOCK**********
14010 SELECT: CLEARW 2:X=30:Y=25:L=300:H=40:GOSUB BOX:SL=0:COLOR 1,1 1,1,2
14020 FOR G=2 TO 6:X=30:Y=G*50-25:L=450:H=40:GOSUB BOX:NEXT G:FILL 2,2
14030 GOTOXY 3 2:PRINT "PLEASE SELECT WITH YOUR MOUSE"
14040 G=2:FOR X=1 TO BL:G=G+3
14050 GOTOXY 3 G:PRINT CHR$(16+X)"  SELECT BLOCK NUMBER ";X:NEXT X
14060 GOSUB 12000:FOR G= 2 TO BL+1
14070 IF MX>30 AND MX<480 AND MY>G*50+15 AND MY<G*50+55 AND BU=1 THEN SL=G-1
14080 NEXT G:IF SL=0 THEN GOTO 14060
14090 RETURN
14200 REM**********WHICH BLOCK ?**********
14210 WHICH: CLEARW 2:X=30:Y=25:L=320,H=40:GOSUB BOX
14230 FOR G 2 TO 6:X=30:Y=G*50-25:L=300:H=40:GOSUB BOX:NEXT G:COLOR 1 1,1,1,2
14232 X=400:Y=25:L 200:H=150:GOSUB BOX
14234 X=400:Y=275:L=200:H=80:GOSUB BOX:FILL 2,2
14240 GOTOXY 3,2:PRINT "SELECT BLOCK STATE WITH YOUR MOUSE"
14250 G=2:FOR X=1 TO BL:G=G+3:GOTOXY 3 G
14260 PRINT NAME$(X);" IS ";:IF STATE%(X)=0 THEN ? "|OFF|" ELSE ? "|ON| "
14270 NEXT X:GOTOXY 26,16
14280 PRINT" > P L O T  ";
14282 GOTOXY 24,2:PRINT "IN GRAPHIC SCREEN CLICK:"
14283 GOTOXY 24 4:PRINT "RIGHT BUT FOR MAIN MENU"
14284 GOTOXY 24 5:PRINT "LEFT BUT FOR PLOT MENU"
14286 GOTOXY 24,6:PRINT "-----------------------"
14287 GOTOXY 24,7:PRINT "FROM THIS SCREEN CLICK:"
14288 GOTOXY 24,8:PRINT "BOTH BUT FOR MAIN MENU"
14290 GOSUB 12000:IF BU=3 THEN GOTO MENU
14295 SL=0:FOR G=2 TO BL+1
14300 IF MX>30 AND MX<330 AND MY>G*50+15 AND MY<G*50+55 AND BU=1 THEN SL=G-1
14310 NEXT G
14320 IF MX>400 AND MX<600 AND MY>243+30 AND MY<323+30 AND BU=1 THEN SL=12
14330 IF SL=0 THEN GOTO 14290
14340 IF SL=12 THEN RETURN
14350 IF STATE%(SL)=0 THEN STATE%(SL)=1:GOTO 14250
14360 STATE%(SL)=0:GOTO 14250
14500 REM **************MAX/MIN**********
14510 MAXMIN: FOR X=1 TO BL :IF STATE%(X)=1 THEN MAX=ITEM(X 1):MIN=0
14520 IF STATE%(X)=1 THEN MAXCOUNT=RANGE%(X 2)-RANGE%(X,1)
14530 NEXT X
14540 FOR X=1 TO BL IF STATE%(X)=0 THEN GOTO 14590
14545 IF RANGE%(X,2)-RANGE%(X 1)>MAXCOUNT THEN MAXCOUNT=RANGE%(X,2)-RANGE%(X,1)
14550 FOR Y=RANGE%(X 1) TO RANGE%(X 2)
14560 IF ITEM(X,Y)>MAX THEN MAX=ITEM(X,Y)
14570 IF ITEM(X Y)<MIN THEN MIN=ITEM(X,Y)
14580 NEXT Y
14590 NEXT X:RETURN
15000 REPORT: CLOSE #1
15010 CLEARW 2:X=20:Y=30:L=300:H=70:GOSUB BOX
15020 X=35 Y=180:L=575,H=100:GOSUB BOX:GOTOXY 3 3
15030 PRINT CHR$(14)CHR$(15)" GRAPH-ST"CHR$(14)" ERROR REPORT SCREEN"
15035 X=425:Y=30,L=180:H=70:GOSUB BOX
15040 FILL 1,1:GOTOXY 3,12
15050 PRINT "ERROR NAME:"
15060 IF ER$="NOR" THEN ER$="FILE NOT FOUND IN DEFAULT DRIVE"
15070 GOTOXY 3,14:PRINT ER$:GOTOXY 27,3:PRINT "CLICK MOUSE"
15080 GOTOXY 27,4:PRINT "TO EXIT"
15090 GOSUB 12000
15100 IF BU<>1 AND BU<>2 AND BU <>3 THEN GOTO 15090
15105 ER$="NOR"
15110 IF MEN=1 THEN CLEAR:GOTO 100
15120 IF MEN=2 THEN GOTO MENU
```



With Kenn Garroch

Health and the VDU

G Lincoln of Canterbury, in Kent, writes

Q I am considering buying an Amstrad PCW 8256 wordprocessor and since I will be using it for most of the day, I would like to know if there are any dangers involved in sitting in front of a VDU all day, with the radiation it gives out, etc.

A VDUs emit an ionising radiation in the form of ultraviolet and soft X-rays and non-ionising radiation as infrared and radio frequencies. Having said this, the amount of ionising radiation, the most harmful kind, is much less than the background amount, that which is around us all the time.

Your main concern should be about fatigue, since it can be very tiring sitting in front of a computer screen all day, leading to eye strain and back ache (I know this from experience). The best cure for the latter is to take fairly frequent breaks and the best way I find to avoid eye strain is to look at the keyboard as you are typing. This keeps your eyes off the screen for a good 50% of the time and although it is bad typing practice seems to solve the problem somewhat.

It has never been proven that VDUs are dangerous and considering how much more work you can get done with a wordprocessor compared with a typewriter, taking the odd break is quite acceptable. If you want to know more about the subject, try some of the following books: *Health Hazards of VDTs (John Wiley, £16.50, ISBN 0 471900656), TUC Guidelines on VDUs (The TUC £1.00, ISBN 1 850060843), VDUs Health and Jobs (Labour Research Dept, £1.10, ISBN 0 900508825)*

Italicize the BBC

A M Cram of Wakefield in Yorkshire writes

Q I know that the BBC has a redefinable character set and uses the VDU 23 command to accomplish the definitions. However, I would like to make up an italic character set by using the original set, and moving it sideways, left and right, at the top and bottom. The problem is that I cannot find the original character set in the Rom. Could you help?

A The character set in Rom starts at *&C000* with character 32 (space) and finishes at *&2FF* with character 128 (solid square). To read it try the following program

```
10 FOR T=&C000 TO &C2FF
20 PRINT ~T FNS(FNB(?T))
30 NEXT
40 END
1000 DEFFNB(X)
1010 LOCAL T R$
1020 FOR T=0 TO 7
1030 R$=STR$(X MOD 2)+R$
1040 X=X DIV 2
1050 NEXT
1060 =R$
1100 DEFFNS(X$)
1110 LOCAL T S$ R$
1120 FOR T=1 TO 8
1130 R$=MID$(X$,T,1)
1140 IF R$="0" THEN R$=" "
1150 S$=S$+R$
1160 NEXT
1170 =S$
```

Alternatively, there is a slicker method using *Osword 10*. This reads the character definition into a buffer and has the advantage that it reads characters that have been defined with VDU23. Just add the following lines to the above program

```
10 OSWORD=&FFF1
20 DIM BUFF 9
30 FOR T=32 TO 255
40 A%=10
50 X%=BUFF MOD 256
60 Y%=BUFF DIV 256
70 ?BUFF=T
80 CALL OSWORD
90 FOR S=1 TO 8
100 PRINT FNS(FNB(S?BUFF))
110 NEXT
120 NEXT
130 END
```

Flippy Floppy discs

A Wright, of Fakenham in Norfolk writes

Q I am going to buy a disc drive for my Commodore 64. Which one should I choose and are they all basically the same?

Besides Commodore's own disc drives, I have seen two other makes advertised which claim to be compatible.

Firstly the Triton quick disc from Radofin Electronics Ltd which uses doubles sided 2.8 inch discettes.

Secondly, the Enhancer 2000 from IE Ltd which uses 5¼ inch floppy discs.

I have not used a disc drive before and would like to make sure that it will use the correct sized disc for the full range of software produced by the software houses from games to utilities. Would you recommend either the Triton, or the Enhancer 2000?

Also, when it says double sided discs, does this mean that like a record, only one side is used at a time?

A The best disc drive to buy for the Commodore 64 is probably the good old 1541. If you want compatibility with all 64 software, this drive, although slow, has it. Bear in mind that most disc protection routines are based around what the 1541 can do. Other drives, although they claim compatibility, cannot be identical to a Commodore drive and so probably won't work with every piece of software available.

The Commodore 1541 is a single sided drive, ie it will only read/write one side of the disc but, if you cut a write protect hole into the other edge of the disc, you can flip it over and use the other side (this is known as flippy floppy).

Enterprising Individuals

N McArdle, of East Kilbride, Glasgow writes

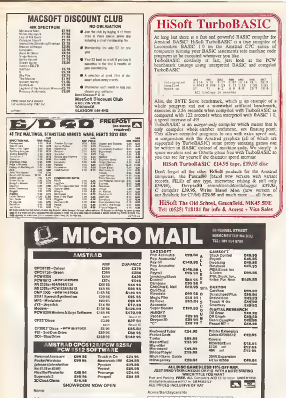
Q I own an Enterprise 128 computer which can run CP/M80 V2.2 programs and I am interested in obtaining some public domain software. Could you please give me the addresses of some of the public domain software libraries?

A Your best bet would be to try the Independent Enterprise user group at 12 Whitegates, 100 Station Road, New Barnet, Herts. Alternatively, the following addresses may be of some help. Although it doesn't specialise in Enterprise CP/M software, it may either know of someone who does, or may be able to offer advice on how to instal programs.

What you need is someone to supply the programs on an Enterprise format disc with suitable instal programs for the particular pieces of software. The membership subscriptions cost approximately £20 a year, depending on how much software you obtain.

P D Software Interest Group, 138 Holtye Road, East Grinstead, Sussex RH19 3EA; CP/M Users Group (UK), 72 Mill Road, Hawley, Dartford, Kent; Disc Formations, 60 Coventry Cross, St Leonards Street, London E3 3JT

Is there anything about your computer you don't understand, and which everyone else seems to take for granted? Whatever your problem *Peek* it to Kenn Garroch and every week he will *Poke* back as many answers as he can. The address is *Peek & Poke, PCW,* 12-13 Little Newport Street, London WC2H 3LD



MACSOFT DISCOUNT CLUB
48K SPECTRUM
Molecule Man £1.98
Video Olympics £1.98
Lap of the Gods £1.88
Octagon Squad £1.78
Incredible Shrinking Fireman £1.78
Master of Magic £2.59
Cauldron £6.50
Back to Skool £4.59
Ninja Master £1.98
Spiky Harold £1.78
Green Beret £5.90
Rambo £5.70
Batman £5.10
V £5.70
Sky Fox £6.75
The Master £1.98
Mutant Monty £1.80
Spitfire 40 £7.50
Legend of the Amazon Women £5.79
Primary Arithmetic £9.00
Offer valid for 4 weeks
UK orders only P&P inc
NO OBLIGATION
Join the club by buying 4 of these titles at these special prices the including a small membership fee.
Membership fee only £2 for one year
Your £2 back as credit if you buy 5 cassettes in the first 6 months of your membership
A selection of great titles at discount prices every month.
Information each month to help you choose your software.
Send Cheque/P O to
MacSoft Discount Club
4 KELVIN VIEW
TORRANCE
GLASGOW G64 4HQ
HiSoft TurboBASIC
At long last there is a fast and powerful BASIC compiler for Amstrad BASIC! HiSoft TurboBASIC is a true compiler of Locomotive BASIC 1.0 on the Amstrad CPC series of computers turning your BASIC statements into machine code programs to be executed whenever you like.
TurboBASIC certainly is fast, just look at the PCW benchmark timings using interpreted BASIC and compiled TurboBASIC
Interpreted
Compiled
Speed up
All timings in seconds
Also, the BYTE Sieve benchmark, which is an example of a whole program and not a somewhat artificial benchmark, executes in 2.56 seconds when compiled with TurboBASIC as compared with 122 seconds when interpreted with BASIC 1.0, a speed increase of 49!
TurboBASIC is an integer-only compiler which means that it only compiles whole-number arithmetic, not floating point. This allows compiled programs to run with extra speed and, in conjunction with the Amstrad graphics (all of which are supported by TurboBASIC) some pretty amazing games can be written in BASIC instead of machine code. We supply a space invaders and an Othello game free with TurboBASIC so you can see for yourself the dramatic speed increase
HiSoft TurboBASIC £14.95 tape, £19.95 disc
Don't forget all the other HiSoft products for the Amstrad computers, like Pascal80 (brand new version with variant records, FILEs of any type, interactive editing & still only £39.95), Devpac80 assembler/editor/debugger £39.95, C compiler £39.95, Write Hand Man (new version of our Sidekick for CP/M) £29.95 and much more ... all from.
HiSoft The Old School, Greenfield, MK45 5DE
Tel: (0525) 718181 for info & Access + Visa Sales
FREEPOST
(no stamp required)
48 THE MALTINGS, STANSTEAD ABBOTS WARE, HERTS SG12 8BR
MICRO MAIL
MANCHESTER
AMSTRAD
RRP OUR PRICE
CPC6128 – Colour £389 £379
CPC6128 – Green £299 £284
PCW 8256 £458 £439
PCW 8512 – NOW IN STOCK £574 £549
RS 232 for 464/664/6128 £49.95 £44.95
RS 232 for PCW 8256/8512 £69.95 £65.95
DMP 2000 – NOW IN STOCK £159.95 £149.95
SSA1 Speech Synthesiser £29.95 £25.95
MP2 – Modulator £29.95 £26.95
JY2 – Joystick £14.99 £12.60
Modem £136.95 £126.00
PCW 8256 Modem & Sage Software £189.95 £172.00
CF2 3" Discs
CF200 3" Discs – NOW IN STOCK
FD1 – 2nd Disc Drive £89.95 £84.95
DD1 – Disc Drive £159.95 £149.95
AMSTRAD CPC6128/PCW 8256/PCW 8512 SOFTWARE
Personal Assistant £99.95
Pocket Wordstar £99.95
(please state whether its 6128 or 8256)
Flexifile/Flexiwrite £49.94
Supercalc 2 £49.95
3D Clock Chess £19.95
Touch n Go £24.95
Mastercalc 128 £34.95
Pyradev £39.95
Protext £26.95
Promerge £24.95
Prospell £24.95
SHOWROOM NOW OPEN
Name
Adress
SAGESOFT
Pop Accounts £99.94
Pop Accounts/Payroll £149.95
Pop Accounts Plus £149.99
Payroll £69.95
Invoicing/Stock Control £69.95
Cambase £99.95
Chit Chat E. Mail £69.95
Chit Chat Viewdata £99.95
Magic Filer £69.95
Retrieve £69.94
Accounts Super Combo £199.95
HISOFT
Pascal 80 £39.95
Devpac 80 £39.95
"C" £39.95
ALL LESS 10% DISCOUNT
CAMSOFT
Stock Control £49.95
Payroll £49.95
Invoicing £49.95
Database £49.95
PSIS Stock Inv & Sales £99.95
PSIL Stock, Inv., Sales Pur Nom £149.95
CAXTON
Cardbox £99.99
Scratchpad Plus £69.94
Brainstorm £49.99
Touch N Go £24.99
Smartkey £49.95
DIGITAL RESEARCH
DR Draw £49.99
DR Graph £49.95
Basic Compiler £49.95
Pascal MT + £49.95
Keyboard Tutor £24.95
Pocket Cash Trader £99.95
Masterfile II £33.99
Microfile/Microword £49.95
Bridge Player £19.95
Hitch Hikers Guide to the galaxy £28.94
Printer Extension Cable 8256/8512 £12.95
Covers
8256/8512 set £12.95
6128 set £12.95
464 set £12.95
256K Expansion kit for 8256 £48.94
ALL DISC GAMES LESS 10% OFF RRP.
JUST SEND YOUR CHEQUE OR P.O. WITH A NOTE STATING WHICH TITLE YOU WANT
Post and Packing FREE. ALL Computers ADD £5 for value UNDER £250
All payments cheque or P.O. to I M PRIESTLY
ALL PRICES INCLUSIVE OF VAT
Acess/Barclaycard No
Signature

Locoscript Wordcount on Amstrad PCW

by Peter Worlock

The accompanying utility provides a simple word count for Locoscript files of up to 6 600 lines – about 100 pages

The file to be checked should be saved in Ascii format (make a copy of the file because Locoscript will not reload Ascii files) You should then load and run Basic followed by this program

It recognises words by trailing spaces and tabs Lines 180-220 do the checking, discounting double spaces and tabs and blank lines

Obviously it s a lot of hassle for short files but for longer documents it saves time and is accurate to about one per cent

The £ symbol on line 110 should be a # incidently

```
10 FOR i = 1 TO 10, down$ = down$+CHR$(10): NEXT
20 home$ = CHR$(27)+"H"
30 cl$ = CHR$(27)+"E"+CHR$(27)+"H"
40 PRINT cl$
50 INPUT "Which file"; file$
60 DIM word$(6600)
70 OPEN "I", 1, file$
80 entries = 0
90 WHILE NOT(EOF(1))
100 entries = entries + 1
110 INPUT £1, word$(entries)
120 WEND
130 CLOSE 1
140 words = 0
150 FOR i = 0 TO entries
160 IF LEN(word$(i)) = 0 THEN 250
170 FOR j = 1 TO LEN(word$(i))
180 t$ = MID$(word$(i),j,1)
190 t1$ = MID$(word$(i),j+1,1)
200 IF t$ < CHR$(33) AND t1$ < CHR$(33) THEN 220
210 IF t$ < CHR$(33) THEN words = words + 1
220 NEXT j
230 words = words + 1
240 PRINT home$ down$ "Total words = " words
250 NEXT i
```

Hires on C64

by David McGlynn

The following program when run and called via a *Sys 49152* command, will place the C64 into high resolution mode

The screen starts at 8192 decimal or 2000 hex It finishes at 16191 decimal or 3F3F hex

To change the address of the screen just *Poke 49153 low byte of address* and *Poke 49158 high byte of address*

The screen colour can be changed from cyan to whatever you wish by using *Poke 49210 no 0-15* and *Poke 49227, name same number*

```
20 REM *** HIRES (C) DAVID MCGLYNN ***
40 PRINTCHR$(147):Q=0
50 PRINT"ENTER SYS 49152 TO RUN CODE"
60 FORX=49152TO49238
70 READA:POKEX,A:Q=Q+A:NEXT
80 IFQ<>12613THENPRINT"ZERROR IN DATA"
90 END
100 DATA169,29,141,24,208,169,187,141,17
105 DATA208,169,0,133,252,169,32,133,253,160
110 DATA0,169,0,145,252,200,208,251,230
120 DATA253,165,253,201,63,208,239,160,0
130 DATA169,0,153,0,63,200,192,64,208,248
140 DATA169,0,133,252,169,4,133,253,160
150 DATA0,169,3,145,252,200,208,251,230
160 DATA253,165,253,201,7,208,239,160,0
170 DATA169,3,153,0,7,200,192,232,208,248
180 DATA96,0,0
```

Future Set on Amstrad

by Pete White

The following routine produces a futuristic character set which can easily be incorporated into your own programs The characters are bsaed on the Data 70 set which frequently crops up in films using 'computer print'

```
[illegible]
30 SYMBOL [illegible]
40 SYMBOL 65,[illegible]
50 SYMBOL 66,126,66,66,[illegible]
60 SYMBOL 67,126,64,64,96,96,96,126,0
70 SYMBOL 68,254,[illegible]
80 SYMBOL 69,126,64,64,120,96,96,126,0
90 SYMBOL 70,126,64,64,120,96,96,96,0
100 SYMBOL 71,126,64,64,102,98,98,126,0
110 SYMBOL 72,[illegible],120,[illegible],98,0
120 SYMBOL 73,66,16,16,24,24,24,66,0
130 SYMBOL 74,126,8,8,24,24,24,120,0
140 SYMBOL 75,68,68,68,120,100,100,100,0
150 SYMBOL 76,64,64,64,96,96,96,126,0
160 SYMBOL 77,126,74,74,98,98,98,98,0
170 SYMBOL 78,[illegible],74,102,98,98,98,0
180 SYMBOL 79,126,66,66,98,98,98,126,0
190 SYMBOL 80,126,66,66,126,96,96,96,0
200 SYMBOL 81,126,66,66,98,98,106,126,4
210 SYMBOL 82,126,66,66,126,104,100,98,0
220 SYMBOL 83,126,64,64,126,6,6,126,0
230 SYMBOL 84,126,16,16,24,24,24,24,0
240 SYMBOL 85,66,66,66,98,98,98,126,0
250 SYMBOL 86,66,66,66,66,66,36,24,0
260 SYMBOL 87,66,66,66,98,106,106,126,0
270 SYMBOL 88,102,102,36,24,36,102,102,0
280 SYMBOL 89,66,66,126,16,24,24,24,0
290 SYMBOL 90,126,4,8,16,32,64,126,0
300 SYMBOL 97,0,0,126,6,126,70,126,0
310 SYMBOL 98,96,96,96,126,98,98,126,0
320 SYMBOL 99,0,0,126,96,96,96,126,0
330 SYMBOL 100,6,6,6,126,70,70,126,0
340 SYMBOL 101,0,0,126,98,126,96,126,0
350 SYMBOL 102,60,48,48,120,48,48,48,0
360 SYMBOL 103,0,0,126,70,70,126,6,126
370 SYMBOL 104,96,96,96,126,98,98,98,0
380 SYMBOL 105,24,0,24,24,24,24,24,0
390 SYMBOL 106,6,0,6,6,6,6,6,126
400 SYMBOL 107,96,96,102,100,120,108,102,0
410 SYMBOL 108,24,24,24,24,24,24,24,0
420 SYMBOL 109,0,0,126,90,90,66,66,0
430 SYMBOL 110,0,0,108,114,98,98,98,0
440 SYMBOL 111,0,0,126,102,102,102,126,0
450 SYMBOL 112,0,0,126,98,98,126,96,96
460 SYMBOL 113,0,0,126,70,70,126,6,6
470 SYMBOL 114,0,0,108,114,96,96,96,0
480 SYMBOL 115,0,0,126,96,126,6,126,0
490 SYMBOL 116,24,24,24,24,24,24,30,0
500 SYMBOL 117,0,0,102,102,102,102,126,0
510 SYMBOL 118,0,0,102,102,102,60,24,0
520 SYMBOL 119,0,0,66,66,98,90,126,0
530 SYMBOL 120,0,0,198,104,16,194,198,0
540 SYMBOL 121,0,0,102,102,102,126,6,126
550 SYMBOL 122,0,0,126,12,24,48,126,0
580 SYMBOL 50,126,2,2,126,96,96,126,0
590 SYMBOL 51,126,2,[illegible]
600 SYMBOL 52,96,96,96,96,104,126,8,8
610 SYMBOL 53,126,64,126,6,[illegible],0
620 SYMBOL 54,126,64,64,126,[illegible],98,126,0
630 SYMBOL 55,126,2,4,62,16,[illegible],0
640 SYMBOL [illegible],126,[illegible],66,126,[illegible],0
650 SYMBOL 57,126,66,66,126,[illegible]
660 SYMBOL 48,126,102,110,[illegible],12
6,0
670 SYMBOL 95,0,255,0,[illegible]
```

CLASSIFIED

Semi-display — £7 per single cc (+ VAT)
Lineage — 30p per word (+ VAT)

CALL RODNEY WOODLEY on *01-437 4343* FOR SEMI-DISPLAY ADVERTISING

FOR SALE

ATTENTION ATARI users. For details about joining Atari watch, the national and the best Atari news service send SAE to P Carlin, 8 Tithe Croft, Heathtown, Wolverhampton, West Midlands WV10 0HT

AMSTRAD CPC 664 with colour monitor plus instruction manual etc £225 ono. Also Amsword £13, Masterfile £13. Phone Bookham 52518

MTX 512 with built in assembler 64K ram usable in basic. 3 months old still in box leads software £100 ono. Spectrum 48K tronics keyboard software books leads £60 ono. Tel 0932 73795. Ask for Kerry

AMSTRAD CPC 464 Colour monitor with games tapes and manual. As new. Boxed. £200 ono. Tel 0730 68375 evenings

CBM 64, cassette, 1541 disk drive, MPS 801 printer – all with dust covers. Over £500 worth of games. 12 blank disks, introduction to Basic 1, easyscript. Excellent condition. Sell – £650 ono. Phone 2671877


SERVICES
LONDON COMPUTER REPAIR CENTRE
★ Spectrum Commodore BBC Atari Amstrad etc
★ Low cost repairs from £12.00
★ Collection & delivery optional
★ Used Micro's bought sold exchanged
Call NIGEL 01-863 7166
MICRO SUPPORT
Unit 3, 15 Springfield Road, Harrow, Middx, HA4 1QF
CHILTERN COMPUTER SERVICE
SPECTRUM £18.00
CHILTERN COMPUTER CENTRE
TOWN ROAD LUTON
Overseas enquiries welcome
COMMODORE REPAIRS
by Commodore approved engineers
★ CBM Power Supplies £15.00
★ VIC 20 Modulators £8.00
★ VIC 20 from £14.00
★ CBM64 etc
For more details write or tele
G C BUNCE & SONS, 36 Burlington Road Burnham Bucks SL1 7BQ
Tele 06286-61696
SINCLAIR REPAIRS
SR TRUMPLUS £10.30
KEYBOARD £8.00
INTERFACE I/MICRODRIVE £17.00 each
All prices are fully inclusive of p&p and VAT
I. T. WESTERN ELECTRONICS
Unit F2A & F3
Avonside Enterprise Park
Newbroughton Road,
Melksham, Wilts
Tele: (0225) 706017
SIMON STABLE PROMOTIONS CASSETTE DUPLICATION
DATA DUPLICATION Telephone 021 643 7113 for further details and prices or write to M G Copies Warwick Chambers 14 Corporation Street Birmingham B2 4RN
Access
Book
your
Classified
or
Semi-display
advert by
Credit
Card



24 HOUR
COMPUTER REPAIRS
and
COMPUTER SPARES
HOW TO GET YOUR SPECTRUM REPAIRED FOR ONLY £19.95
THE NO 1 REPAIR CENTRE IN THE U.K. OTHERS FOLLOW
SPECTRUM (only) KEYBOARD REPAIRS £8.95 THE CHEAPEST AROUND
WHILE YOU WAIT SERVICE CALL FOR APPOINTMENT
TRADE REPAIRS MOST WELCOME
WHY NOT COME AND VISIT US AT OUR NEW 2,500 SQ. FT. WORKSHOP. YOU CAN EVEN HAVE A CUP OF COFFEE WHILE YOU WAIT
SPECIAL OFFER!
SPECIAL OFFER!
16K to 48K UPGRADE KIT
SPARES FROM OUR D.I.Y. SECTION
WHY NOT PURCHASE THE SPARES FOR YOUR COMPUTERS FROM US THE ONLY MAIL ORDER COMPANY SELLING SPECTRUM SPARES
Same day despatch service on receipt of orders
You can order by Access card or call at our Reception to collect.
TRADE REPAIRS
TEN ★ REPAIR SERVICE
compu er spare parts over the counter
All computers fully overhauled and fully tested before return.
Fully insured for the return journey
Fixed low price of £19.95 including post packing and VAT. (Not a between price of really up to £30.00 which some of our competitors are charging!
Keyboard repairs Spectrum rubber key boards only £8.95
3 month written guarantee on all repairs
BEST SERVICE – BEST PRICES!
EXTENSION RIBBON
56 Way ribbon cable to extend your ports for your peripherals
£10.95 plus £1.50 p & p
KEYBOARD TEMPLATES £5.50 plus £1.50 p & p
RUBBER MAT £6.50 plus £1.50 p & p
TRADE ORDERS WELCOME
ARE YOU ANOTHER CUSTOMER - fed up waiting weeks for your estimate?
Need your computer repaired fast? Then send it now to the Number One Repair Company in the U.K. or call in and see us at our new fully equipped 2,500 square foot workshop with all the latest test equipment available. You are more than welcome.
We will repair your computer while you wait and help you with any of your technical problems. Commodore computers repaired for only £35.00. Please note we give you a 100% low fixed price of £19.95 which includes return post and packing VAT not a between price like some other Repair Companies offer. We don't shock you with repair bills £30.00 upwards. We don't just repair the fault and send your computer back we give your computer a
NEW
SPECIAL OFFER!
REPLACEMENT POWER SUPPLY
Spectrum replacement power transformer suitable for all makes of computer £9.95 plus £1.50 p & p
ZX81 SPARES NOW IN STOCK
FREE OVERHAUL WITH EVERY REPAIR WE DO.
We correct Colour, Sound, Keyboard. Check the loading and saving chip. Put new feet on the base if required. Check for full memory. Check all sockets including ear/mike and replace where needed. All for an inclusive price of £19.95 including VAT, all parts, insurance and post and packing. No hidden extras whatsoever. We don't have to boast too much about our service as we have thousands of customers from all over the world highly delighted with our service. A first class reputation for speed and accuracy. Don't forget, we are only twenty minutes from Manchester City Centre so why not call in, have a coffee with us and see your computer being repaired.
VideoVault D.I.Y. CORNER
We regret we cannot show all the components available. Just give us a call and we can quote you over the phone. delivery by 1st class post
SPECTRUM SPARES
COMMODORE SPARES
VIDEOVAULT HEALTH WARNING!!!
Sending your computer to any other Repair Centre can Seriously Damage its Health
Spectrum keyboard membranes
£5.50 plus £1.50 p & p
Spectrum Plus spare keyboard membranes
£12.90 plus £1.50 p & p
ZX 81 membranes
£5.00 plus £1.50 p & p
KEYBOARD MEMBRANES
COMMODORE POWER SUPPLY
Commodore replacement power transformer £29.00 plus £1.50 p & p
ORDER NOW!
5 GREAT FREE GAMES
NORMAL RECOMMENDED RETAIL PRICE £33.00
YOURS FREE WITH EVERY SPECTRUM REPAIR
SPECIAL OFFER
FULLY REPAIRED AND TESTED ON MOST ADVANCED TEST EQUIPMENT IN EUROPE!
VideoVault Ltd
MANCHESTER CITY CENTRE BRANCH NOW OPEN CALL FOR DETAILS
140 High St. West, Glossop, Derbyshire, England
© Copyright Videovault Ltd No. 150786

There's a Dealer near you . . .

YORKSHIRE

TORK COMPUTER CENTRE
7 STONEGATE ARCADE
YORK
Tel: (0904) 641862

ESSEX

ESTUARY
PERSONAL COMPUTERS

316 CHARTWELL NORTH
VICTORIA CIRCUS SHOPPING CENTRE
SOUTHEND ON SEA
Tel: (0702) 614131

CAREY ELECTRONICS
FOR
THE BBC MICROCOMPUTER
SYSTEMS
COMPUTERS AND SOFTWARE,
PERIPHERALS
7 CHURCH ROAD
WALTON-ON-NAZE, ESSEX
FRINTON-ON-SEA (02556) 6993
9am-5pm

H REYNOLDS
79 ORSETT ROAD
GRAYS, ESSEX
Tel: (0375) 375948

MIKES COMPUTER STORE
292 LONDON ROAD
WESTCLIFF-ON-SEA
ESSEX
Tel: (0702) 332554

ATARI
520 STM
£399

Communication PLUS+

3 HONEYWOOD ROAD
(Off Cranes Farm Rd)
BASILDON
Tel: (0268) 21818

Communication PLUS+

c/o KEDDIES
(second floor)
HIGH STREET
SOUTHEND
Tel: (0702) 62426

NOBLES
14-17 EASTERN
ESPLANADE
SOUTHEND-ON-SEA,
ESSEX
Tel: (0702) 63377/8

GLASGOW

THE COMPUTER DEPOT
205 BUCHANAN STREET
GLASGOW G1 2JZ
Tel. (041) 332 3944

HEREFORDSHIRE

HONEYSETT COMPUTERS
17 UNION STREET
HEREFORD HR1 2BT
Tel: (0432) 279404
ASK ABOUT
CLUNKER SALE

MEGABYTE
12 ETTRICK SQUARE
CUMBERNAULD
G67 1ND
0236 738398

KENT

ANIROG COMPUTERS
29 West Hill
Dartford
Kent
Tel: (0322) 91649

dgh software centre
10 NORTH STREET,
ASHFORD, KENT
Tel: (0233) 32597

MICROWAY COMPUTERS
39 HIGH STREET
RAINHAM, KENT
Tel: (0634) 376702

MIDDLESEX

INNOVATIONS
COMPUTER & VIDEO
9 HARMONDSWORTH ROAD
WEST DRAYTON
MIDDLESEX UB7 9JS
Tel: (0895) 420457

LEEDS

NORTHWOOD HOUSE
NORTH STREET
LEEDS LE7 2AA
Tel: (0532) 458800

LONDON

LOGIC SALES
19 THE BROADWAY
THE BOURNE, SOUTHGATE
LONDON N14
Tel: 01-882 4942

GALLERY SOFTWARE
1st FLOOR
THE ARNDALE CENT,
WANDSWORTH,
LONDON SW18
Tel: 01-870 4941

VIC ODDENS
5 LONDON BRIDGE WALK
LONDON SE1
Tel: 01-403 1988

GAMES WORLD
129 KING STREET
HAMMERSMITH
LONDON W6
Tel: 01-741 4467

LIVERPOOL

NABITCHI COMPUTING
SPECIALISTS IN AMSTRAD
PCW8256 – PCW8512
SOFTWARE & HARDWARE
MERSEYSIDE INNOVATION CENTRE
131 MOUNT PLEASANT
LIVERPOOL L3 5TF
051-708 0123/708 8775
Software Design Service Available

NORFOLK

THETFORD MICROS
SPECIALISTS –
COMPUTER REPAIRS
21 GUILDHALL STREET
THETFORD
NORFOLK
(0842) 61645

SUSSEX

GATWICK COMPUTERS
62 THE BOULEVARD
CRAWLEY, SUSSEX
Tel: (0293) 26240/37842

There's a Dealer near you

MIRBO ASSEMBLER cartridge CBM 64 £36.00 Micro Wordcell word processor CBM 64(D) £12.00 Supercalc Primer (book) published U.S.A. £8.00 Mastering Assembly Code (book) BBC Model B micro £5.00 Tel 0258 55435 (Dorset)

MEMOTECH 512 64R, 11 games + utility 3 books colour monitor RGB Composite + Sound Input £150! Phone Redhill (0737) 63243 after 6pm

SINCLAIR QL Psion 2 S/W 6 month old 3 languages Utilities, Supercharge QDoctor + more than ten games £1800 Expanderam 512K £98 Phone Mr Lee (0742) 669140 evenings

MODEMS Nightingale £85 WS2000 £60 VTX5000 £20 also Atari 850 interface (parallel +4 serial ports) £30 Centronics parallel interface for QL/Spectrum 128K £16 Spectrum 48K £45 Will consider offers Tel 091 272 2719

PLUS4 OWNERS. Join the club that puts you first. Bi monthly tape magazine and 64K software. Years subscription £5.50! Send s a e for details to Plus4 Club 14 Beech Hill Wellington Somerset

AMSTRAD CPC464 with some software and colour monitor £180 Also Commodore plus 4 with cassette deck Joystick and software £40 Tel Medway 404437

INFOCOM adventures for the Amstrad 6128 Hitchhikers Guide £14 and Planetfall £12 Originals unwanted gifts Tel 01 672 2509

MICROVITEC 1441 ultra high resolution colour monitor with TTL input (BBC Micro Master etc) £220 Phone Michael on Bishop s Stortford (0279) 813304

BROTHER HR-5 printer as new hardly used £50 Stockport area Tel 061 483 9461 after 6pm

COMMODORE 64 standard recorder F25 32k RAM pack £15 16k ram pack £10 8k ram pack £6 Over £50

COMMODORE 64 + tape deck and over £350 software including Hard hat Uridium and Arc of Yesod £250 o n o inc P&P Tel (0277) 213460

FOR SALE Spectrum Plus data recorder Spectrum interface and software including Frankie Goes To Hollywood and Daley Thompson s Supertest not forgetting some magazines £80 o n o Tel Batley (0925) 443557 after 6pm

INTERFACE ONE microdrive and eight cartridges interface three All for £80 Tel Ches 051 355 3526

AMSTRAD 664 built in disc drive modulator (no monitor) Swap for CBM 64 or C128 and C2N Tel 01 471 9335

AMSTRAD PCW 8512, as new warranty etc two pcw games and book £440 o n o 01 886 7077

CASIO FX-7000G graphics calculator as new £40 o n o 01 985 7077

DRAGON 32 with tape recorder and loads and loads of original software Also including two joysticks cost over £325 Will sell for £120 o n o Tel (0384) 79726

SPECTRUM PLUS Interface one two two micro drives ten microdrive cartridges DKtronics keyboard printer Printer paper data recorder manual leads all in good condition £200 o n o Tel Letchworth 884895

WANTED games for atari and M S X computers Must be originals with inserts Send lists and s a e for offers To Mr R Martin 13 Naunton Crescent Cheltenham Glos

ATARI ST software for sale The pawn £15 Lands of Havoc £10 H&D toolbox £15 All originals plus 810 disk drive with happy and archiver Sensible offers only Tel (0702) 613441

48K SPECTRUM with manuals and leads interface one microdrive plus cartridge Kempston interface plus reset button Kempston joystick alftone compucorder books tapes and magazines All for £200 Tel 0902 894576

ATARI ST software all as new condition Many half price Used couple of times only IE mean eighteen golf rogue temple apshai trilogy etc Tel Bournemouth 0202 470342

BARGAINS ZX PRINTER £5 per box of two rolls (or p &p) Olivetti ink jet printer £80 o n o Tel 01-886 8379

ATARI 1050 DISK DRIVE with laser enhancement (true double density plus fast I/O plus "happy" type back up facility) £135 o n o Atari 800 48K £75 o n o Tel Dan 051 728 7492

48K SPECTRUM complete with a joystick and two interfaces a light pen a data recorder and over £150 worth of software All for £95 o n o Tel (0932) 463882 after 6p m

QL FOR SALE with psion chess kempston centronics interface version one software hence £56 Tel 01-671 2172

COMMODORE 128, tape deck books games magazines £235 1541 disk drive 60 blank disks disk games Back up cartridge £175 All boxed Tel (0942) 878582

AMSTRAD CPC6128, green screen cassette recorder and leads joystick five disks five cassettes and lots of magazines Excellent condition all for just £240 Tel (05697) 395 after 6pm

WANTED EPSOM LX80 printer in good order with QL lead if possible 01 579 5159

BBCB UDM DDFS TEAC DISC drive 40/80 track 800k DSDD modem brother printer sideways ram rom /ram board and lots more quick sale £600 Tel Burntwood 3392

CBM64/+ TURBO rom fitted plus reset Cassette/+ disc drive Five inch colour t v Alws taps tape unit Mouse joysticks printer many more £850 No offers Regret no split Tel 01 577 3875 Private

New Releases

Pick of the week

John Cook looks through this week's new arrivals

Amstrad CPCs

Program *Stainless Steel* **Type** Arcade **Micro** Amstrad CPCs **Price** £8 95 cassette, £13 95 disc **Supplier** MikroGen Unit 15 Western Centre Bracknell Berkshire



Program *The Virgin Atlantic Challenge Game* **Type** Simulation **Micro** Amstrad CPCs **Price** £8 95 **Supplier** Virgin Games, 2 Vernons Yard Portobello Road, London W11

Program *Mission Elevator* **Type** Arcade Adventure **Micro** Amstrad CPCs **Price** £9 95 tape, £14 95 disc **Supplier** Micropool 4 Mercury House, Calleva Park, Aldermaston Berks RG7 4QW

Program Pacific **Type** Arcade **Micro** Amstrad CPC **Price** £9 95 **Supplier** PSS 452 Stoney Stanton Road, Coventry CV6 5DG

Another Ere Informatique game from the likes of PSS – who gave you the likes of *Get Dexter* and *Doomsday Blues*. This one's called *Pacific*. However good the Ere team are at programming, their Geography and Mythology are not up to much. This has you searching the depths for the secret treasure of Atlantis – the fabled city that is surely supposed to be hidden below the Atlantic. Oh well.

I wouldn't say the thing is quite up to the standard of the previous releases, as you guide your diver (almost *Jet Pac* like) around the sea, avoiding the zapping venomous faune, keeping an eye on your oxygen supply (which can be topped up on the way to the seabed) and generally admiring the colourful scenery – which brought back happy memories of Jacques Cousteau burbling philosophically about 'the lure of la mer' and the 'leettle feeshes'.

To relive those heady days in front of the box – this is the one, but don't expect to hit an adrenalin high on this particular offering.

Atari XE/XL

Program *Submarine Commander* **Type** Arcade **Micro** Atari 800 32K, 800XL, 130XE **Price** £1 99 **Supplier** Sparklers CSD, Unit B11 Armstrong Mall The Summit Centre, Southwood, Farnborough, Hants GU14 0NP

Program *Desmond Dungeon* **Type** Arcade **Micro** Atari 400, 800, 800XL, 130XE **Price** £1 99 **Supplier** Sparklers, address as above

Program *Soccer* **Type** Simulation **Micro** Atari 800 32K 800XL 130XE **Price** £1 99 **Supplier** Sparklers address as above

BBC B

Program *Graphic Adventure Creator* **Type** Utility **Micro** BBC B **Price** £22 95 tape £27 95 disc **Supplier** Incentive 54 London Street Reading Berks RG1 4SQ

Program Missile Control **Type** Arcade **Micro** BBC B **Price** £4 99 (disc) £3 99 (tape) **Supplier** Gemini Marketing, Gemini House, Concorde Road, Exmouth EX8 4RS

Here's a blast from the past for you – *Missile Control* a close relative (some would say twin) of that legendary Atari coin-op game *Missile Command*. You know the one that got CND so annoyed all those years ago.

Fire the nuclear missiles from your bases to save your cities from the nuclear rain falling from above – all of which has achieved a new topicality with the arrival of 'Star Wars' technology from the colonials.

This same game was released quite some time ago – but if you haven't got it yet, this is a great chance to pick up one of the all-time arcade greats at a knockdown price ... particularly nice if you own a disc drive.

Smooth fast and mean this is a title you'll be telling your grandchildren about – even if they do glow and have three heads.

Awesome powers

Program *Mindstone* **Type** Adventure **Micro** Spectrum **Price** £9 99 **Supplier** The Edge 36–39 Southampton Street Covent Garden, London WC2E 7HE

To quote from the ancient annals of the cassette label, 'Some say that the *Mindstone* is part of the original substance that formed the Land, others claim that the Gods themselves dropped it to earth, yet others would have us believe that it is of little value at all.'

The latter comment I would have thought is an especially dangerous thing to put in an opening blurb – but still, when there are Gods and Land involved, elves and quests cannot be far away.

What *Mindstone* actually is, is a very polished, highly professional icon-driven animated graphic adventure. The quest is that you, Prince Kyle, together with a band of three chums, must seek out and retrieve the mindstone that your brother has stolen when fleeing from the family home, only stopping to psychically do in the king (your dad). Naturally having the mindstone in his possession gives him Awesome Powers, so this is going to be no easy task.

The upper part of the screen is given over to display what goes on the present location, who is present, what is happening etc, which animates when an action is being performed. This is quite effective and lends a measure of atmosphere to the proceedings.

Actions are performed by selecting the appropriate member of the party from the icon on the bottom part of the screen, which leads on to the further sub-menus from which actions can be selected *Examine, Look, Trade, Buy,* etc. This is quite simple to get used to – although chaotics be warned, the system won't allow you to attack people at random.

Altogether a nice mixture of adventuring elements which should keep most pixies happy for some time. Recommended if you're in the market for a good quest.

MSX

Program *Castle Blackstar* **Type** Adventure **Micro** Any MSX **Price** £8 95 **Supplier** CDS Micro Systems, Silver House Silver Street Doncaster. South Yorkshire DN1 1HL

Program *The Ice King* **Type** Arcade **Micro** Any MSX **Price** £6 95 **Supplier** CDS Micro Systems, address as above

Commodore 64/128

Program *Herculas* **Type** Arcade Adventure **Micro** Commodore 64 **Price** £1 99 **Supplier** Alpha-Omega/CRL, 9 King s Yard, Carpenters Road London E15

Program *Skool Daze* **Type** Arcade Adventure **Micor** Commodore 64 **Price** £2 99 **Supplier** 2 99 Classics/Elite, Anchor House, Anchor Road, Aldridge Walsall WS9 8PW

Program *Mission Elevator* **Type** Arcade Adventure **Micro** Commodore 64 **Price** £9 95 tape, £12 95 disc **Supplier** Micropool, 4 Mercury House Calleva Park, Aldermaston Berks RG7 4QW

Program *Hoodoo Voodoo* **Type** Arcade **Micro** Commodore 64 **Price** £1 99 **Supplier** Bugbyte Victory House, Leicester Place, London WC2H 7NB

Program *Graphic Adventure Creator* **Type** Utility **Micro** Commodore 64 **Price** £22 95 tape £27 95 disc **Supplier** Incentive, address as above

Program Arcana **Type** Arcade **Micro** Commodore 64 **Price** £8 95 **Supplier** Virgin Games 2–4 Vernon Yard, Portobello Road London W11 2DX

New Generation is part of the Virgin stable nowadays and this is its first really new release under the new regime, *Arcana* although Virgin/New Generation is also releasing oldies – but – goodies such as *Trashman* and *Cliffhanger*.

Arcane is a well designed arcade adventure during which you must locate dark things and destroy them in a race against time but the first thing that will strike you is the similarity between this style of game and the *Pendragon* series of titles that came out of Ultimate Very similar perspective graphics gamesplay, and screen display

There must be more to the Collective Unconscious than I thought This doesn't stop *Arcane* from being an entertaining game of its kind but if you didn t like the *Pendragon* saga then this has nothing extra that is going to appeal to your tastes

C16/Plus/4

Program *Winter Events* **Type** Simulation **Micro** C16/Plus/4 **Price** £7 95 **Supplier** Anco, 4 Westgate House, Spital Street, Dartford, Kent

Program *Leaper* **Type** Arcade **Micro** C16/Plus/4 **Price** £1 99 **Supplier** Bugbyte Victory House, Leicester Place London WC2H 7NB

Program *Jailbreak* **Type** Arcade **Micro** C16/Plus/4 **Price** £1 99 **Supplier** Bugbyte Victory House, Leicester Place London WC2H 7NB

PCW8256/8512

Program *Quickstep* **Type** Business **Micro** PCW8256/8512 **Price** £24 95 **Supplier** Topaz Computer Systems 70 High Street Saxilby Lincoln LN1 2HA

Sinclair QL

Program *The Lost Pharaoh* **Type** Arcade Adventure **Micro** QL **Price** £14 95 **Supplier** Talent Computer Systems 101 St James Road, Glasgow G4 0NS

It is a sad fact that the supply of new software for the QL does seem to be drying up which is a great pity as the few bits and pieces we do get on the whole tend to be very good Take *The Lost Pharaoh*, for example Stefan Kuhne has taken an old arcade game and produced an excellent version for the black beastie

You control a little explorer who is given the task to explore the passageways underneath the shifting sands of the Egyptian desert to find the burial chamber of the lost pharaoh

Armed only with a trusty blunderbuss, you must zap nasties, find keys, open doors, use transporters – yup, transporters Von Daniken was right I tell you! Those ancients knew a thing or two about matter transportation and no mistake

The whole thing adds up to a jolly romp that will keep you amused for quite some time without overly taxing the grey matter

And a pat on the back to Talent for continuing to support the QL in its hour of need There are not many other companies that are still game enough to put their telephone numbers on the packaging nowadays either

Spectrum

Program *Full Throttle* **Type** Simulation **Micro** Spectrum 48K **Price** £2 99 **Supplier** 2 99 Classics/Elite, Anchor House Anchor Road Aldridge, Walsall WS9 8PW

Program *Skool Daze* **Type** Arcade Adventure **Micro** Spectrum 48K **Price** £2 99 **Supplier** 2 99 Classics/Elite, address as above

Program *Dangermouse in Double Trouble* **Type** Arcade **Micro** Spectrum 48K **Price** £1 99 **Supplier** Sparklers address as above

Program *Stagecoach* **Type** Arcade **Micro** Spectrum 48K **Price** £1 99 **Supplier** Sparklers, address as above

Program *Time Wreck* **Type** Arcade Adventure **Micro** Spectrum 48K **Price** £1 99 **Supplier** Sparklers address as above

Program *Colossus 4 Chess* **Type** Strategy **Micro** Spectrum 48/128 **Price** £14 95 **Supplier** CDS Software CDS House, Beckett Road, Doncaster DN2 4AD

Program *Virgin Atlantic Challenge Game* **Type** Simulation **Micro** Spectrum 48/128 **Price** £7 95 **Supplier** Virgin Games 2 Vernon Yard, Portobello Road London W11

Program *Graphic Adventure Creator* **Type** Utility **Micro** Spectrum 48/128 **Price** £22 95 **Supplier** Incentive address as above

Program *Stainless Steel* **Type** Arcade Adventure **Micro** Spectrum 48K **Price** £9 95 **Supplier** MikroGen, address as above

Program *Captain Slog* **Type** Arcade **Micro** Spectrum 48K **Price** £1 99 **Supplier** Alpha-Omega/CRL 9 Kings Yard Carpenters Road London E15

Program *Sbugetti Junction* **Type** Arcade **Micro** Spectrum 48K **Price** £1 99 **Supplier** Bugbyte, Victory House Leicester Place, London WC2H 7NB

Program *Mission Omega* **Type** Arcade Adventure **Micro** Spectrum 48/128 **Price** £9 95 **Supplier** Mind Games Victory House Leicester Place London WC2H 7NB

Top Twenty



1	(–)	Dragon's Lair	Software Projects
2	(4)	Speed King	Mastertronic
3	(3)	Green Beret	Imagine
4	(1)	Ghosts and Gobins	Elite
5	(3)	Leaderboard	US Gold
6	(–)	Video Olympics	Mastertronic
7	(10)	ACE	Cascade
8	(5)	Ninja Master	Firebird
9	(17)	One Man and his Droid	Mastertronic
10	(9)	Kik Start	Mastertronic
11	(6)	Molecule Man	Mastertronic
12	(7)	Kung Fu Master	US Gold
13	(8)	Jack the Nipper	Gremlin
14	(11)	Formula One Simulator	Mastertronic
15	(13)	Thrust	Firebird
16	(16)	Knight Games	English
17	(15)	Cauldron II	Palace
18	(14)	Knight Tyme	Mastertronic
19	(19)	Kane	Mastertronic
20	(12)	Second City	Novagen

Top Tens



All figures compiled by Gallup/Microscope

Amstrad

1	(1)	Kane	(Mastertronic)
2	(–)	Speed King	(Mastertronic)
3	(3)	Headbanger	(Firebird)
4	(–)	Knight Games	(English)
5	(2)	Knight Tyme	(Mastertronic)
6	(4)	Ghosts and Goblins	(Elite)
7	(6)	Storm	(Mastertronic)
8	(5)	Green Beret	(Imagine)
9	(7)	Molecule Man	(Mastertronic)
10	(8)	Elite	(Firebird)

Commodore

1	(–)	Dragons Lair	(S'ware Proj)
2	(1)	Leaderboard	(US Gold)
3	(3)	Speed King	(Mastertronic)
4	(2)	Green Beret	(Imagine)
5	(7)	Knight Games	(English)
6	(4)	Ghosts & Goblins	(Elite)
7	(6)	Ninja Master	(Firebird)
8	(8)	Thrust	(Firebird)
9	(–)	One Man	(Mastertronic)
10	(6)	Second City	(Novagen)

Atari

1	(1)	Kik Start	(Mastertronic)
2	(3)	Salt Creek	(Creative Sparks)
3	(–)	Dos & Dungeons	(C Sparks)
4	(8)	Soccer	(US Gold)
5	(–)	Spellbound	(Mastertronic)
6	(–)	Ras Golly	(Americana)
7	(5)	Nuclear Nick	(Americana)
8	(–)	Action Biker	(Mastertronic)
9	(–)	Darts	(Blue Ribbon)
10	(2)	Collapse	(Firebird)

BBC

1	(1)	Thrust	(Superior)
2	(–)	C'wealth Games	(Tynesoft)
3	(6)	Airwolf	(Elite)
4	(–)	Tennis	(Bugbyte)
5	( )	Citadel	(Superior)
6	(6)	Commando	(Elite)
7	(3)	Cricket	(Bugbyte)
8	(4)	Star Force 7	(Bugbyte)
9	(7)	Ian Botham	(Tynesoft)
10	(2)	Mikie	(Imagine)

Spectrum

1	(7)	Video Olympics	(Mastertronic)
2	(6)	ACE	(Cascade)
3	(3)	Ghosts and Goblins	(Elite)
4	(2)	Jack the Nipper	(Gremlin)
5	(1)	Kung Fu Master	(US Gold)
6	(4)	Molecule Man	(Mastertronic)
7	(8)	Ninja Master	(Firebird)
8	(10)	Bobby Bearing	(The Edge)
9	(–)	Stainless Steel	(MikroGen)
10	(–)	Full Throttle	(Classics)

NEXT WEEK

Special Supplement

BBC micros

All the news and latest products from the Acorn User show... word pro-

cessing – the choices available... create your own adventures with Incentive's *Graphic Adventure Creator*... the latest in musical add-ons – the Music 5000 digital synthesiser.

Micro chess

Don't miss our new regular series on computer chess – and start playing in the *Popular* vs *Celesus* tournament.

Hardware

As Amstrad gears up to launch its PC in September, what of its rivals in the cheap PC clone market? We look at the Bondwell PC, now being imported by Spectrum Group, and assess its chances.

The Hackers




ARCANA
Joystick required.
Commodore 64/128
£8.95
PLEASE RUSH ME ARCANA FOR MY COMMODORE 64/128
Name
Address
Please make cheques and postal orders to Virgin Games Limited and post to the address below
Please do not post cash
Virgin Games Ltd, 2-4 Vernon Yard,
119 Portobello Road,
London W11 2DX